

HANG BY THIS WIRE

HANG THIS UP

**THE NET PRICE BOOK
N^o 78**

SUPPLIES
AND
TOOLS
FOR
MILL
AND
SHOP



PIONEERS
IN THE
REBUILDING
OF
FLOUR
MILL
MACHINERY

GENERAL-MILL FURNISHERS

AND MANUFACTURERS OF

Ideal
**FLOUR MILL, ELEVATOR
AND
GRAIN HANDLING MACHINERY**

B.F. GUMP CO.

431-437 S. CLINTON STREET
CHICAGO

ESTABLISHED 1872

INCORPORATED 1901

B. F. Gump Co. Catalog No. 78

THIS catalog supersedes all previous issues, and all prices in all former catalogs are hereby canceled and annulled. As far as possible we have quoted net prices, no further discount, thus enabling our customers to learn at a glance just what an article will cost without further consulting us. In a few instances we have thought it advisable to quote the standard list prices, and discount applying to such items will be furnished on application. Owing to frequent market changes, all prices herein are subject to change without notice. We will always give you the lowest prices possible at time your order is received. All orders are accepted subject to delay by accidents, strikes or other causes beyond our control. Orders placed with us cannot be countermanded, except with our consent and upon terms that will indemnify us against loss. Stenographical or clerical errors are subject to correction.

WHO WE ARE—OUR RESPONSIBILITY

Having been established in business since 1872 (more than 48 years) as general mill furnishers and rebuilders of flour mill machinery, and enjoying the reputation of square dealing, that we do, among the flour and grist mills of the United States, we cannot do more than refer you to any one or more of these Mills with whom we have, no doubt, had business dealings at some time during our long business career. To those who would like still more evidence of our fairness and responsibility we refer to any commercial agency or the Mercantile Trust and Savings Bank of Chicago, Ill.

OUR TERMS OF PAYMENT

Our terms of payment are thirty days net from date of invoice. We will extend credit to parties who are financially responsible and if unknown to us and not commercially rated, we require references or cash to accompany order or permission to ship C. O. D. draft with B-L attached, in which case we require a partial payment of 25% of the total amount of the order in advance. When we have obtained a receipt of the goods delivered in good order to the railroad or transportation company, our responsibility ceases and goods are shipped at BUYERS' RISK and railroads or transportation companies act as buyers' agent in handling them. Shipments made by Parcel Post, at request of Customers, are at their risk.

SENDING MONEY

Please send all remittances by bank draft, express or postal money order. Send currency only in registered letters; we cannot be held responsible for currency or coin sent in ordinary letters. Do not send private checks; all Chicago banks charge 1½c to 7½c exchange on each private check. If you will send express or postal money order, in either case you may deduct the cost of same from your remittance.

MILLING PLANS AND FLOW SHEETS

Drawings of mill buildings with plans and specifications and millwright plans for locating the machinery, together with the most modern and complete flow sheets for flour and cereal mills of all descriptions are furnished without cost to purchasers of machinery. We have the services of old and experienced millers and mill-wrights for this branch of our business, and everything will be thoroughly modern and up-to-date.

WE BUY SECOND-HAND MACHINERY

We are always in the market for good, salable, second-hand flour mill and elevator machinery. If you have any machinery for sale, write to us, giving the following information: Character of machinery, size and capacity, whether new or old style; if Roller Mills, state the present caliper diameter of rolls and whether they have been through a fire or not; if a Buhr Mill give a description of the stones and the distance between the upper and lower band, stating whether with or without the fittings.

**FOR FULL LIST OF 2nd HAND AND REBUILT MACHINERY SEE
"GUMP BARGAIN" BOOK**

GEO. W. MOORE
President

A. D. DORMAN
Vice-Pres.

W. M. WILLIAMS
Sec. and Treas.

ESTABLISHED
1872

B.F.GUMP CO.

431-437 South Clinton Street
CHICAGO, ILLINOIS

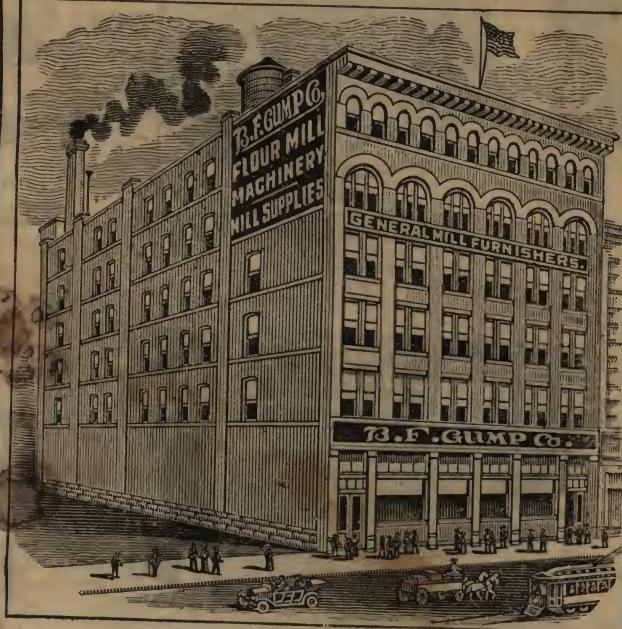
INCORPORATED
1901

MANUFACTURERS AND REBUILDERS
Of Flour Mill, Feed Mill and Elevator Machinery

DEALERS

In Flour and Feed Mill, Grain Elevator and Farm Machinery, Belting, Mill and Thresher Supplies and Transmission Appliances

The
G U M P
Guarantee is
backed by al-
most a half-
century of
Square Dealing.
It covers all the
merchandise
shown in this
Catalog and is
your protection



IMPORTANT
Our
Prices
are subject to
change without
notice. It is
our desire to
maintain these
prices without
change, but the
uncertain mar-
ket may neces-
sitate changes.
All merchandise
will be billed at
lowest market
prices

SELLING AGENTS

For "Dufour" Silk and "Tyler" Wire Bolting Cloth, "Niagara" Grain Cleaning Machinery, "Gardner" Sifters and Mixers, and "Superior" Elevator Cups

EXPERTS

In Roll Grinding and Corrugating—Flowing and Designing
Complete Mills and Elevators

WE ARE PIONEERS IN THE REBUILDING OF FLOUR MILL MACHINERY

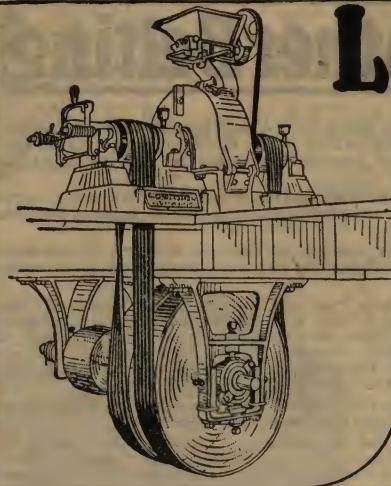
"There is a difference between Second-Hand and Rebuilt Machinery"

This Catalog contains NET Prices on NEW Machinery, Belting, Appliances and Supplies. To keep the Trade posted on our Stock of REBUILT MACHINERY, USED BELTING AND SUPPLIES, we will publish, at frequent intervals during the year, a small booklet called

"G U M P B A R G A I N S"
Mailed on Request

Leather Belting

All of Our Belting is Guaranteed
Against Defective Workman-
ship or Material.



"Satisfaction" Brand

A Medium quality belt suitable for light and medium power transmission.

Do not confuse this brand with standard or cheap agricultural belting.

Will give excellent satisfaction for power transmission where the strain is not too severe, as on agricultural, threshing, milling machinery, etc.

Constructed of the same class of workmanship as our better grades of belting, the only difference being that the quality of the stock used is of a lower cut.

The most improved methods are used in the making of our belting and insure the user maximum service.

We will oil dress and rivet laps without extra charge when desired.

SINGLE "SATISFACTION"
STOCK SIZES LISTED AT NET PRICE
PER FOOT
No. 78A11

Size inch	Price foot	Size inch	Price foot
3/4	\$0.10	2 1/4	\$0.37
1	.13	3	.39
1 1/4	.17	3 1/2	.46
1 1/2	.20	4	.52
1 3/4	.23	4 1/2	.59
2	.26	5	.66
2 1/4	.30	6	.79
2 1/2	.33		

DOUBLE "SATISFACTION"
No. 78A13

1	\$0.22	4	\$0.87
1 1/2	.33	4 1/2	.98
2	.44	5	1.08
2 1/2	.54	6	1.30
3	.65	7	1.52
3 1/2	.76	8	1.73

**B.F.GUMP &
CO.
CHICAGO**

"Short Lap" Brand

Excellent quality belt suitable for most forms of power transmission.

"Short Lap" Brand Belting is the grade sold by most houses as their best belt. It is a good center stock belt, cut from that portion of the hide right next to that portion from which the finest belting obtainable is taken. The fibers are dense and strong and for transmission of power in flour mills, elevators and places where a good belt is required it will give excellent service. This belting cannot be furnished wider than 8 inches singles and doubles.

ENDLESS BELTS or belts with **PREPARED LAPS** furnished promptly at an additional charge of one foot for belts up to 9 inches wide. For belts 9 inches wide and over charge is 4 inches plus the width of the belt.

In ordering state only the exact length around pulleys and whether endless or prepared laps are desired.

SINGLE "SHORT LAP"
No. 78A15

Size inch	Price foot	Size inch	Price foot
3/4	\$0.12	3	\$0.47
1	.16	3 1/2	.56
1 1/4	.20	4	.64
1 1/2	.23	4 1/2	.72
1 3/4	.27	5	.80
2	.31	6	.99
2 1/4	.35	7	1.17
2 1/2	.39	8	1.30
2 3/4	.43		

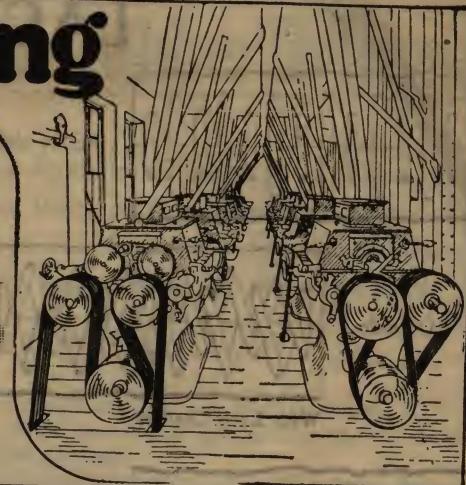
DOUBLE "SHORT LAP"
No. 78A17

1	\$0.26	4	\$1.05
1 1/2	.39	4 1/2	1.18
2	.52	5	1.32
2 1/2	.66	6	1.58
3	.79	7	1.84
3 1/2	.92	8	2.10

Leather Belting

"HONESTY" BRAND

No Better Belt Made Than "Honesty"
Brand Leather Belting



SINGLE "HONESTY"

For Roller Mills, Continuous Belt Drive Attrition Mills, Saw Mills and places where high tension and speed are required.
STOCK SIZES LISTED AT NET PRICE PER FOOT.

No. 78A19

Size Inch	Price Foot	Size Inch	Price Foot
1	\$0.17	5	\$0.84
1½	.25	6	1.07
2	.33	7	1.26
2½	.42	8	1.44
3	.50	9	1.61
3½	.58	10	1.80
4	.67	12	2.16
4½	.75		

Other Sizes Furnished.
Prices on Application.

Extra Heavy SINGLE "HONESTY"

Especially adapted for Roller Mills and Attrition Mills, etc.
STOCK SIZES LISTED AT NET PRICE PER FOOT

No. 78A21

Size Inch	Price Foot	Size Inch	Price Foot	Size Inch	Price Foot
3	\$0.61	2½	\$0.72	9	\$2.59
		3½	.71	10	2.88
		4	.81	12	3.45
		4½	.92	14	4.03
		5	1.02	16	4.60
		6	1.22	18	5.18
		7	1.43	20	5.76
		8	1.63	22	6.33
		9	1.84	24	6.91

DOUBLE "HONESTY"

For Main and Counter Drives
Double Belt Drive Attrition
Mills, Saw Mills and Electric
Light Plants, etc.

STOCK SIZES LISTED AT NET PRICE PER FOOT.

No. 78A23

Size Inch	Price Foot	Size Inch	Price Foot	Size Inch	Price Foot
3	\$0.72	2½	\$0.72	9	\$2.59
		3½	.86	10	2.88
		4	1.00	12	3.45
		4½	1.15	14	4.03
		5	1.30	16	4.60
		6	1.44	18	5.18
		7	1.72	20	5.76
		8	2.02	22	6.33
		9	2.30	24	6.91

ALL THE NAME IMPLIES

Our "Honesty" Brand of Leather Belting represents the equal of the highest quality of leather belting that can be made. Cut from the center portion of special selected hides, and put together by skilled workmen making it the strongest and most serviceable belting that can be produced for all forms of medium, heavy or severe power transmission in which a leather belt may be applied.

Almost fifty years of belting experience enables us to know what belting is best suited for various work. We will be glad to help you in selecting the belt best suited for your work, if you state your requirements.

"ROLLER MILL" BRAND

A high grade Dynamo Belt which is specially made for use on Motors, Dynamos, Single Stand, Double Stand, Two pair high and Three Pair high Roller Mills.

Other sizes furnished on application.

ROLLER MILL

STOCK SIZES LISTED AT NET PRICE PER FOOT.

No. 78A25

Size Inch	Price Foot	Size Inch	Price Foot
3	\$0.65	7	\$1.52
4	.87	8	1.73
4½	.98	10	2.16
5	1.08	12	2.60
6	1.30		

Gump's Waterproof Leather Belting

For Use In Damp and Wet Places

Gump's Waterproof Leather Belting is guaranteed not to be affected by coming in contact with water or oils while running on pulleys.

Specially adapted for use in Water Wheel Rooms, Dairies, Creameries, for driving pumps, outdoor use, and all places where an ordinary leather belt could not be used. Other sizes furnished. Write for prices

SINGLE WATERPROOF

STOCK SIZES LISTED AT NET PRICE PER FOOT

No. 78A27

Size Inch	Price Foot	Size Inch	Price Foot	Size Inch	Price Foot
1	\$0.19	3½	\$0.71	7	\$1.51
1½	.29	4	.86	8	1.73
2	.38	4½	.97	9	1.94
2½	.48	5	1.08	10	2.16
3	.61	6	1.30	12	2.59

DOUBLE WATERPROOF

STOCK SIZES LISTED AT NET PRICE PER FOOT

No. 78A29

Size Inch	Price Foot	Size Inch	Price Foot	Size Inch	Price Foot
2½	\$0.90	4½	\$1.62	8	\$2.88
3	1.08	5	1.80	9	3.24
3½	1.26	6	2.16	10	3.60
4	1.44	7	2.52	12	4.32

Other Sizes Furnished. Prices on Application
Guaranteed Absolutely Waterproof

B.F.GUMP &
CHICAGO

LACING BELTS

Care should be taken in lacing every belt put into use, and many a good belt has been condemned on account of not being properly laced.

Good belting costs money and a big factor in its efficiency and length of service is due to the manner in which it is laced.

WHEN LACING BELTS

cut the ends perfectly straight, so that when butted they will match perfectly. Make two rows of holes in each end and lace as per sketches, taking care to have the holes punched in straight lines across the belt placed zig-zag and that the holes made in one end shall be opposite those made in the other end.

The edge of the holes should not come nearer than $\frac{3}{4}$ -inch from the sides, nor $\frac{1}{8}$ -inch from the ends of the belt. The second row should be at least $1\frac{1}{4}$ inch from the end. On wide belts these distances should be even a little greater. Begin to lace in the center and take care to keep the ends exactly in line, and to lace both sides with equal tension. The lacing should not be crossed on the side of the belt that runs next to the pulley.

Number Holes and Size Lace to be Used on Various Width Belts

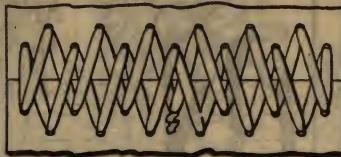
Width Belt	Total Holes to be Punched Each End	Holes In 1st Row Each End	Holes In 2nd Row Each End	Size Lace to be Used	On Leather Belt Use Punch No.
3 in.....	4	2	2	$\frac{1}{4}$	7
4 in.....	5	3	2	$\frac{1}{8}$	8
5 in.....	6	3	3	$\frac{1}{16}$	8
6 in.....	7	4	3	$\frac{3}{16}$	9
7 in.....	8	4	4	$\frac{1}{8}$	9
8 in.....	9	5	4	$\frac{3}{16}$	9
10 in.....	11	6	5	$\frac{1}{2}$	10
12 in.....	13	7	6	$\frac{1}{2}$	10

Makes Holes Equal Distances Apart.

IMPORTANT!

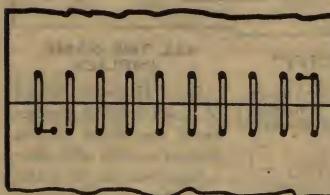
In Lacing Rubber and Fabric Belts, do not cut holes with a Punch, which cuts the fabric. Use a pointed instrument (awl or nail) and you will not be troubled with the lace tearing out.

Outside



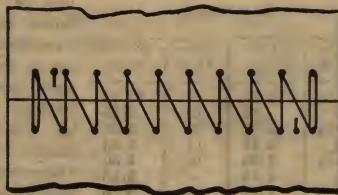
With Lace Leather

Pulley side.



Pulley side.

Outside.



With Wire Lacing

BELT LACING MACHINE

PRESSES THE HOOKS INTO THE BELT

By the use of this machine anyone can really make a first-class joint, and do it quicker than by any method of lacing.



Every Mill Needs
Clipper Belt
Lacer.

Will Lace Any
Width Belt.

Once Used---Always Used

"Clipper"
TRADE MARK REGISTERED

BELT
LACING



Clipper Garden Hooks

"Clipper" hooks are made from a special steel wire of an analysis that combines great tensile strength with rigidity and wearing qualities. Actual tests have also proven that each hook will stand a pulling strain of 60 pounds, equal to over 400 pounds per inch of belt.

Note the position of hooks in belt. No holes punched, nothing taken out to weaken it—no fibre cut to allow belt to ravel. Hooks are zig-zag so that the pull is distributed over a large area of belt.

Clipper hooks are carried, long and short ends alternating. This card is easily removed after hooks have been locked into the tool. Cards contain 36 hooks each (enough for a 6 inch belt) and are packed 27 cards in a box with 14 rawhide pins, one for each laced joint. Each box will lace 84 inches (in width) both ends of belt.

78B303

SIZES AND NET PRICES

No. 2, for thin belts over small sized pulleys.....	Per box \$1.00
No. 3, for thin belts over medium sized pulleys.....	1.25
No. 4, for belts not over $\frac{1}{4}$ inch thick.....	1.25
No. 5, for belts not over $\frac{1}{2}$ inch thick.....	1.50
No. 6, for belts not over $\frac{5}{8}$ inch thick.....	1.75

When used in damp and moist places, use Coppered Hooks at \$0.25 extra, per box net.

78B301—No. 3 Clipper Belt Lacing Machine.
Net Price, each.....\$25.00

Information on GUMP'S Rubber Belting

Two pieces of rubber belting may appear the same in all outward appearances, but the differences would be noted when applying them to the same forms of power transmission. Therefore the Rubber Belting offered is represented by our different brands and the value received will always be fairly represented by the price paid.

USE AND CARE OF RUBBER BELTING

1. *Shafting* should be maintained in correct alignment, *pulleys* should be accurately balanced, and *bearings* well lubricated. Thus the belt will run true, will not flap, and need not be stretched tighter than necessary.
2. Long *center to center distances* for horizontal drives, and short centers for vertical drives are the best. On the horizontal drives the weight of the belt assists in giving good pulley contact while on the vertical drives the weight of the belt acts just the opposite.
3. *Vertical and quarter-twist drives* are not desirable. On quarter-twist drives, only one-half of the width of the belt is used for transmitting power. We will not guarantee belting on this drive unless mention is made of same on your order—stating size of pulley, kind of machine and distance of centers. Quarter-twist drive belts should be turned end for end occasionally, to transfer the excessive tension from one edge to the other, and thus keep the belt straight and more evenly stretched.
4. Always make the *bottom belt the pulling side* whenever possible, as the sag of the belt on the top side increases the arc of contact on each pulley and therefore gives better traction.
5. The *lacing of belts* should be properly done with lace leather or belt hooks. This work should be carefully done, with the proper fasteners. Many a good belt has been condemned and put out of use by the improper application of lacing.
6. Do not use *belt tighteners* unless really needed—with the proper sizes of pulleys and belt they will not be required.
7. *Use light belting* on wide pulleys of large diameter rather than heavy belting on narrow pulleys of small diameter. The larger the pulley the less the internal deformation of the belt in bending around the pulley, and the closer it will embrace the pulley thruout every inch of contact. A heavy belt on a small pulley is unduly strained in its outer plies and gives poor driving contact because of the wrinkling effect of compression in the inner plies.
8. 2000 feet per minute is a fair average to work to in *ordinary service*, but any speed from 1000 to 5000 feet per minute is good.
9. Higher power on a pulley is not best secured by using a heavier belt, but rather by increasing the speed or the width of the belt. The best results at all times with the ordinary belt will be secured by using no belt in service on a pulley smaller in inches of diameter than the square of the number of plies in the belt.
10. *Avoid Always.*

Vertical Drives	High Crowns
Quarter-Twist Drives	Belt Tighteners
Careless Lacing	Small Pulleys
Excessive Tensions	Heavy Belts
Shifters or Guides	Belt Dressings
11. To find the horse-power of any rubber belt: Multiply together the number of plies in the belt, its width in inches, the pulley diameter in inches, and the speed in rotations per minute, then divide by 12,000.

EXAMPLE: 5 ply belt, 6 inches wide;
24-inch pulley, 300 R.P.M.
 $5 \times 6 \times 24 \times 300 \div 12,000 = 18 \text{ H.P.}$

This formula is for both pulleys of the same diameter, where the pulleys are of a different diameter, one is therefore smaller than the other and the contact arc is less, the H.P. transmitted is then variable to a proportion of the arcs of contact.

IN ORDERING BELTING ALWAYS STATE:

The exact measurements of the belt—*length, width and ply*.

The size of the pulleys.

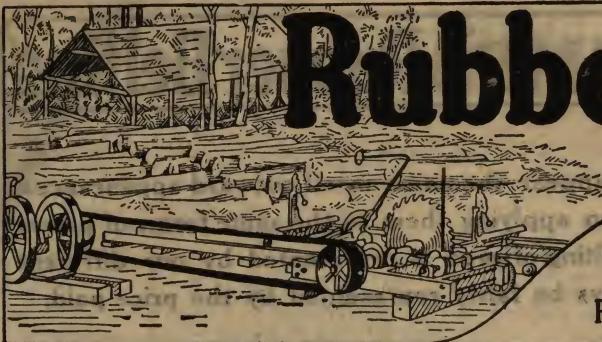
The revolutions per minute of the driver pulley.

The approximate amount of horse-power to be transmitted.

The kind of work the belt is to do.

A description of the drive.

Rubber Belting



"Miller's Delight"

Brand

Rubber covered

A High Grade Belting Adapted for General All Round Transmission.

No better belt can be recommended for all around work than the "Miller's Delight" Brand. Constructed of high grade duck, with an excellent friction and is Rubber covered. Guaranteed to give good satisfaction in most places where a Rubber Belt is adapted.

We Recommend These Brands for the Following Uses:

Use—"EXTRA STANDARD" BRAND for Elevator Belting with buckets attached and for medium power transmission.

Use—"MILLER'S DELIGHT" BRAND for general all-around power transmission except those forms specified below.

Use—"HI-SPEED SPECIAL" BRAND for roller mills, motors, blowers on threshing machines, fans, pumps, wood working machinery and on all small pulleys and high speeds.

Use—"HEVI-DUTY" BRAND for extra heavy drives of exceptional tensions or regular size pulleys.

STOCK SIZES AT NET PRICE PER FOOT
Cat. No. 78A45

Width Inches	Net Prices Per Foot			
	3-Ply	4-Ply	5-Ply	6-Ply
2	\$0.16	\$0.18		
2½	.19	.22		
3	.22	.26		
3½	.26	.30		
4	.28	.33		
4½	.31	.37		
5	.35	.41	\$0.51	\$0.61
6	.42	.49	.61	.73
7		.57	.72	.86
8		.62	.77	.92
10		.77	.96	1.15
12		.92	1.15	1.38
14		1.08	1.34	1.62

Other sizes furnished. Prices upon application.

"Extra Standard" Brand

A Very Good Belting of Medium Weight. Suitable for All Medium Transmission or for Elevator Belting

STOCK SIZES AT NET PRICES PER FOOT
Cat. No. 78A41

Width Inches	Net Prices Per Foot				
	2-Ply	3-Ply	4-Ply	5-Ply	6-Ply
1	\$0.06	\$0.07			
1¼	.08	.09			
1½	.10	.11	\$0.13		
2	.12	.14	.17		
2½	.15	.17	.20		
3		.20	.23		
3½		.23	.27		
4		.25	.30		
4½		.28	.33		
5		.31	.37	\$0.46	\$0.55
6		.37	.44	.55	.66
7		.44	.51	.64	.77
8		.47	.55	.69	.83
9			.62	.78	.94
10			.69	.86	1.04
11			.76	.95	1.14
12			.83	1.04	1.24
13			.90	1.13	1.35
14			.97	1.21	1.45
15			1.04	1.30	1.56
16			1.11	1.39	1.66

Other sizes furnished. Prices upon application.

IMPORTANT

In Lacing Rubber Belts, do not cut holes with Punch, which cuts the fabric. Use a pointed instrument (awl or nail) and you will not be troubled with the lace tearing out.

Rubber Belting

"High Speed Special"

Brand

Friction Surface.



"Hevi-Duty" Brand

Friction Surface
Adapted for Heavy Duty
and Severe Service

Made of the highest quality of extra heavy specially woven duck, with the best grade of rubber friction between the plies. Adapted for most all forms of power transmission, such as Main Drives, Machine Drives, etc., where a belt of extreme strength and stability is required. No better Rubber Belt Made.

A Belt Made Especially for Use on Small Pulleys and High Speed Machinery.

Particularly adapted for use on woodworking machinery, saw mills, lumber mills, paper mills, mines, etc.; also on roller mills, blowers, on threshing rigs and silo fillers, motors, fans, or any form of service using high speed and small pulleys.

The body of the belt consists of a multiple of plies of light, strong duck, with a very high quality of rubber friction. Five-ply is equal in tensile strength to single leather belt and seven-ply is equal to light double leather belt.

Stock Sizes Listed at Net Price Per Foot

Cat. No. 78A47

Width, Inches	Net Prices, Per Ft.	
	5-Ply	7-Ply
2	\$0.26	
2½	.32	
3	.36	
4	.46	\$0.65
5	.58	.81
6	.69	.96
8	.87	1.22

5 Ply - Single Leather.

7 Ply - Light Dbl. Leather

STOCK SIZES LISTED AT NET PRICE
PER FOOT
Cat. No. 78A43

Width Inches	3-Ply	4-Ply	5-Ply	6-Ply
2	\$0.20	\$0.23		
2½	.24	.28		
3	.28	.33		
3½		.38		
4		.41		
5		.51	\$0.64	
6		.61		
7		.72		
8		.77	.97	1.16
10		.96	1.20	1.44
12			1.15	1.44
14				1.68
16				2.02
				1.93
				2.31

Balata Belting

High Tensile Strength
Waterproof --- Flexible.
Great Tractive Power

Balata Belting is the strongest fabric belting made. Tests show a tensile strength of over 10,000 lbs. to the square inch. It gives remarkably long service and does not deteriorate with age. It is an excellent belt for main drives. It is waterproof and suitable for use either outdoor or inside, except where excessive heat conditions exist.

Made of very heavy closely woven 40 oz. duck woven on special looms under high tension which takes out practically all the stretch. The duck is then impregnated with pure balata gum. This can be used in a more closely woven duck than rubber, which is the reason why balata is of greater tensile strength than rubber belting. It is very flexible for its weight and is, therefore well adapted to high speeds and small pulleys. It also has unusual traction. Three-ply balata is equal to light single leather belting; four-ply to heavy single leather; five-ply to light double leather, and six-ply to heavy double leather belt.

STOCK SIZES LISTED AT NET PRICE PER FOOT
Cat. No. 78A49

Width, Inches	PRICE, PER FOOT			
	3-Ply	4-Ply	5-Ply	6-Ply
1	\$0.09			
1¼	.12			
1½	.14	\$0.18		
1¾	.16	.21		
2	.18	.24		
2½	.23	.30		
3	.27	.36		
3½	.32	.42		
4	.36	.48	\$0.60	\$0.72
4½	.41	.54		
5	.45	.60	.75	.90
6	.54	.72	.90	1.08
7		.84	1.05	1.26
8		.96	1.20	1.44
10		1.20	1.50	1.80
12		1.44	1.80	2.16



"Elco" Red Stitched Canvas Belting

FOR BEST RESULTS

Belts should run in the center of the pulleys and should not be held in place by any object that will injure or break the edges.

Do not overload belts.

Do not use belt dressing except that especially made for canvas belts. Elco friction belt paint is especially made for canvas belts. It preserves the elasticity and increases traction power.

FIRST QUALITY—PERFECT CONSTRUCTION

Combines Strength, Durability and Economy

"Elco" red stitched canvas belting represents a real value as it is made of the best materials and workmanship and will give satisfaction on all drives where a canvas stitched belt is adapted. It is made of heavy weight tightly woven cotton duck, folded and lockstitched every one quarter inch across the width of the belt. It is waterproofed with a combination of oils and gum which preserves the fabric and renders it pliable under any climatic conditions. The red paint is extremely elastic in texture with ample body to protect the waterproofing compound and give maximum traction.

All Elco belting is thoroughly stretched, cured and pressed and is guaranteed to give perfect satisfaction under all conditions where it is practical to use canvas stitched belting.

Sizes And Net Prices—No. 78A51

Width inches	Net Price Per Foot			
	4-Ply	5-Ply	6-Ply	8-Ply
1 1/2	\$0.08			
2	.11			
2 1/2	.13			
3	.15			\$0.23
3 1/2	.18			
4	.20		\$0.25	.30
4 1/2	.22			
5	.24		.31	.36
6	.28		.35	.43
7	.32		.41	.49
8	.36		.46	.55
9	.40		.50	.60
10	.44		.55	.66
12	.55		.69	.83
14	.62		.78	.94
16	.71		.89	1.07
18	.80		1.00	1.20
20			1.12	1.34
24				1.60
30				2.19
				2.92

EXTRA CHARGE FOR MAKING BELTS ENDLESS

When canvas belts are to be made endless, an extra charge is made as follows:

All belts 16 in. wide or less, the charge for making endless is equal to **seven feet** of belt size ordered. To obtain charge add seven feet to length in lineal feet around the pulleys and multiply by the price per foot. Belts over 16 in. wide, we make a charge equal to an additional length of belting five times the width of the belt.

NOTE: Always give the distance around the pulleys in lineal feet, and not the distance between centers in ordering endless belts. Where the length ordered is given, the belt will be made to that measurement—endless—which is always taken for complete length on pulleys.



"Elco" Red Stitched Canvas Drive Belts

GUARANTEE

Belts should be run in the centre of the pulley and
should not be held in place by any object that will
injure or break the edges.

Results of overloading, use of injurious Belt Dressings or chafed, frayed or nicked edges do not constitute defects.

Positively no allowance unless claims are made within 30 days from date put in use and belt returned to us freight prepaid.

We will replace any belt proving defective in material or workmanship.

REDUCE BELT SLIPPAGE AND PRODUCE EVEN CYLINDER SPEED

Thoroughly Stretched, Cured and Pressed, Will Run Perfectly True on the Pulleys

Elco endless drive belts will run threshing separators, corn shellers, ensilage cutters, saw mills, feed mills, etc., at a steady even speed which prolongs the life of both the belt and machine. This is because they are even in thickness, and pliable under all climatic conditions, giving perfect traction thereby reducing belt slippage to the minimum. This is of greatest importance in the operation of threshing separators where even cylinder speed is essential for perfect separation.

"Elco" belts are made right. They are constructed of heavy weight, tightly woven cotton duck, folded and lock-stitched every one-quarter of an inch across the width of the belt, except at the splice where the stitches are one-eighth inch apart.

The patented splice is guaranteed not to separate and actually tests stronger than any other part of the belt. By cutting the duck at an angle of 45 degrees with an extension flap in the two centers plies overlapping, when folded the two angles butt together with the extension flap on the outside. The splice has stitches every one-eighth inch apart across the width of the belt.

"Elco" belts are water proofed with a combination of oils and gum which preserves the fabric and also makes it pliable in all climates. They are covered with an elastic paint which protects the waterproofing and gives maximum traction.

Every belt is thoroughly stretched, cured and pressed.

Stock Sizes and Net Cash Prices

No. 78A53—4-Ply

Width	50 ft. Length	75 ft. Length	100 ft. Length	125 ft. Length	150 ft. Length
5-inch	\$13.25	\$19.20	\$25.40	.....	.....
6-inch	15.40	22.45	29.70	\$36.75	.....
7-inch	17.55	25.65	33.75	41.85	\$49.95
8-inch	19.75	28.90	38.10	47.25	56.20
9-inch	.....	.....	.....	.....	62.10

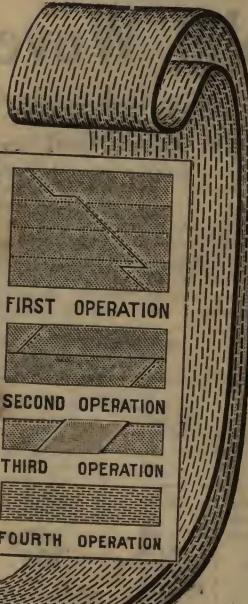
No. 78A55—5-Ply

Width	125 ft. Length	150 ft. Length	160 ft. Length
7-inch	\$52.40	\$62.40	.....
8-inch	58.90	70.50	\$74.80
9-inch	.....	77.50	82.35

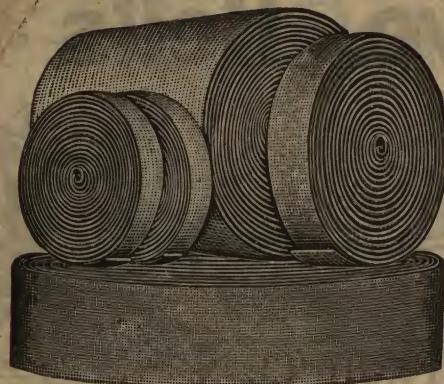
No. 78A57—6-Ply

Width	150 ft. Length	160 ft. Length
8-inch	\$84.55	\$89.95
9-inch	93.15	99.40

"ELCO"
B.F.GUMP &
CHICAGO



Solid Woven White Cotton Belting



**Solid Woven, With No Plies to Come Apart.
Absolutely Uniform in Strength and Thickness**

**Constructed to Give Maximum
Strength and Service**

Only the highest class of workmanship is used in the manufacture of this Belting. It is woven so that it is absolutely uniform in strength and thickness. This careful workmanship insures a cotton Belting of Highest Quality and Durability. It is constructed of the very best quality of long, staple, hard twisted cotton yarn, especially selected to give service under the most severe strain.

STOCK SIZES LISTED AT NET PRICE PER FOOT

Width, Inches	No. 78A61 Net Prices Per Foot				
	2-Ply	3-Ply	4-Ply	5-Ply	6-Ply
1	\$0.02	\$0.04	\$0.05		
1½	.03	.04	.06		
2	.04	.05	.07		
2½	.04	.06	.08		\$0.11
3	.05	.07	.09		
3½	.05	.08	.10		
4	.06	.09	.11		
4½	.07	.10	.12		
5	.08	.11	.14	\$0.19	.23
5½	.08	.11	.15		
6	.09	.12	.16	.22	.27
6½		.13	.17		
7		.14	.18	.25	.31
8		.16	.21	.29	.36
9		.20	.25	.33	.41
10		.22	.29	.38	.47
11		.24	.31	.41	.51
12	.18	.25	.34	.45	.56
13		.27	.36	.49	.60
14		.29	.39	.52	.65
15			.42	.56	.68
16		.33	.46	.60	.71
18			.52	.67	.80
20			.59	.74	.90
22			.65	.85	1.02
24			.71	.93	1.12
30			.92	1.17	1.47

Solid Woven Cotton Belting is put to a thousand uses in Flour Mills, Cereal Mills, etc. It is used for Elevator Belting, buckets being attached for carrying the product to the machines. In Lumber Mills it is used to carry boards on the level or from one floor to the next. In Box Factories for conveying lumber and boxes. In Printeries, Envelope Mfgs., etc., for conveying paper clippings, paper, printed matter, etc. In Saddlery making, for harness, bands, straps, etc.

Directions for Lacing Cotton Belting

With a tri-square, cut the ends of the belt perfectly true. Do not cut the fabric, but use a large awl in making the holes. There should be in each end of the belt two rows of holes, placed zigzag. The edge of holes should not come closer to the sides of the belt than three-quarters of an inch, and not nearer the end than seven-eighths of an inch.

We do not guarantee this belting for outdoor use or in damp places.

Solid Woven Waterproof Cotton Belting

For Indoor or Outdoor Service.

A Solid Woven Belt --- No Plies to Come Apart

This belting is the same construction as white Cotton Belting, except that it is waterproof for outside as well as indoor use.

It will not become hard or crystallize, retaining its flexibility at all times. Not affected by water, oils, gases or climatic conditions. A product of high quality which will give unqualified service and satisfaction.

We recommend this belting for all uses in transmitting power, conveying or elevating in flour mills, feed mills, grain elevators, saw mills or for outside use where belting comes in contact with the weather. It does not require belt dressing of any sort. It will also run slack without slipping.

NET PRICES PER FOOT ON STOCK SIZES

No. 78A63

Width,	SINGLE Equal to 4-Ply Net price per ft.	DOUBLE Equal to 6-Ply Net price per ft.	Width	SINGLE Equal to 4-Ply Net price per ft.	DOUBLE Equal to 6-Ply Net price per ft.
2 inch	\$0.10	\$0.16	7 inch	\$0.35	\$0.56
2½ inch	.13	.20	8 inch	.40	.64
3 inch	.15	.24	9 inch	.46	.72
3½ inch	.20	.32	10 inch	.50	.80
4 inch	.25	.40	12 inch	.60	.96
5 inch	.30	.48	14 inch	.70	1.12

NOTE.—We furnish with each Waterproof Belt one set of Alligator Steel Belt Lacing FREE!



Waterproof Endless Drive Belts

We make Waterproof Solid Woven Cotton Endless Belts for threshers, corn shellers, saw mills, etc.

It is the strongest, toughest, and best drive belt made. No plies to come apart. Absolutely waterproof. Fully guaranteed. All sizes furnished.

PRICES on APPLICATION.

Elevator Belting With Cups Attached



Prompt Delivery Assured
on Complete Elevator Belts, using any kind of
Belting or any style cups.

We can furnish complete elevator belts, using either rubber, cotton or stitched canvas belting with Salem, Steel Grain, Tin Mill, Minneapolis V, Malleable or Superior "D. P." cups attached—any size elevator belt with any kind of belting or any style of cups to suit any requirement you may have.

In the table of sizes and prices quoted below, we use white solid woven cotton belting and "Extra Standard" rubber belting with Salem, (unless otherwise specified) cups attached with reliance elevator fials spaced 16 inches apart.

PRICES BELOW ARE FOR LENGTHS OF 100 FEET WITH BUCKETS SPACED 16 INCHES APART.
WILL FURNISH YOU ANY REQUIRED LENGTH AT PROPORTIONATE PRICES.

SOLID WOVEN WHITE COTTON BELT WITH SALEM BUCKETS ATTACHED 16 INCHES APART.—NET PRICES—78N1650

Length, Feet	Width Belt, Inches	Ply	No. of Salem Buckets	Size Salem Buckets	Net Price	Length, Feet	Width Belt, Inches	Ply	No. of Salem Buckets	Size Salem Buckets	Net Price
100	3½	3	75	3 x3	\$17.00	100	6	4	75	5½x4	\$32.00
100	4	3	75	3½x3	18.00	100	7	4	75	6 x4	34.00
100	4½	3	75	4 x3	22.00	100	8	4	75	7 x4½	43.50
100	5	3	75	4½x3½	23.00	100	9	4	75	8 x5	52.00
100	5½	3	75	5 x4	25.50	100	10	4	75	9 x5	57.50
100	6	3	75	5½x4	28.00	100	11	4	75	10 x5½	64.00
100	7	3	75	6 x4	30.00	100	12	4	75	11 x6	76.00
100	8	3	75	7 x4½	38.50	100	13	5	75	11 x6	87.00
100	5	4	75	4½x3½	29.00	100	13	4	75	12 x6	84.00
100	5½	4	75	5 x4	30.00	100	13	5	75	12 x6	97.00

EXTRA STANDARD RUBBER BELTS WITH SALEM BUCKETS ATTACHED 16 INCHES APART.—NET PRICES—78N1652

Length, Feet	Width Belt, Inches	Ply	No. of Salem Buckets	Size Salem Buckets	Net Price Salem	Net Price Steel/Grain	Length, Feet	Width Belt, Inches	Ply	No. of Salem Buckets	Size Salem Buckets	Net Price Salem	Net Price Steel/Grain
100	5	4	75	4½x3½	\$49.00	\$55.00	100	14	5	75	12x6	\$169.00	\$168.00
100	6	4	75	5½x4	60.00	62.50	100	14	5	75	12x7	181.00	*182.00
100	7	4	75	6 x4	67.50	71.00	100	14	5	75	14x7	184.00	*188.00
100	8	4	75	7 x4½	78.00	80.50	100	15	4	75	14x6	158.00	156.50
100	9	4	75	8 x5	69.50	90.00	100	15	4	75	14x7	167.00	*171.00
100	10	4	75	9 x5	98.00	100.00	100	15	5	75	14x6	184.00	182.50
100	10	5	75	9 x5	115.00	117.00	100	15	5	75	14x7	193.00	196.50
100	11	4	75	10 x5½	109.00	113.00	100	16	5	75	15x7	.....	+212.00
100	11	5	75	10 x5½	128.00	132.00	100	17	5	75	16x6	209.00	+218.00
100	12	4	75	11 x6	125.00	125.00	100	17	5	75	16x7	235.00	*226.00
100	12	5	75	11 x6	146.00	145.50	100	18	5	75	18x7	243.00	+235.00
100	13	4	75	12 x6	138.00	137.00	100	20	5	75	18x7	265.00	*259.00
100	13	5	75	12 x6	161.00	160.00	100	22	4	75	20x6	227.00	+236.00
100	14	4	75	12 x6	145.00	144.00	100	22	5	75	20x6	265.00	+274.00

*—Fitted with Steel Corn Buckets.

†—Steel Ear Corn Buckets.

NOTE—Can attach buckets 12 inches apart at a small additional charge.

LACE LEATHER, BELT LACING AND ACCESSORIES

Rawhide Lace Leather

Soft, Pliable and of The Best Quality

Our lace is made from the best selection of Packer Steer Hides. After the process of making them into Rawhide is finished, they are then graded into what is called "first and second selections." Our many years of experience has taught us that the "first selection" is the most satisfactory to our customers and, while the price is only a few cents higher, the difference in quality is considerable.

78B200

Note—We do not sell less than one side.

Sides Sq. ft.	Net price, each	Sides Sq. ft.	Net price, each	Sides Sq. ft.	Net price, each
12	\$6.24	14½	\$7.41	16½	\$8.58
12½	6.37	14½	7.54	16½	8.71
12¾	6.50	14½	7.67	17	8.84
12½	6.63	15	7.80	17½	9.10
13	6.76	15½	7.93	18	9.36
13¼	6.89	15½	8.06	18½	9.62
13½	7.02	15½	8.19	19	9.88
13¾	7.15	16	8.32	19½	10.14
14	7.28	16½	8.45	20	10.40



"Indian" Tanned Lace Leather

"Indian" Tanned Lace Leather is hand-made and very durable in wet, hot or cold places. There is a growing demand for a good "Tanned" lace, and we offer the "Indian" Brand as the best on the market.

Note—We do not sell less than one side.

78B202

In Sides, 10 to 20 Square Feet

Sides Sq. ft.	Net price, each	Sides Sq. ft.	Net price, each	Sides Sq. ft.	Net price, each
10	\$5.50	13½	\$7.43	17	\$9.36
10½	5.78	14	7.70	17½	9.63
11	6.05	14½	7.98	18	9.90
11½	6.33	15	8.25	18½	10.18
12	6.60	15½	8.53	19	10.45
12½	6.88	16	8.80	19½	10.73
13	7.15	16½	9.08	20	11.00

Rawhide Cut Lace

Gump's Rawhide Cut Lace is from the best selection of hides. All lace is hand cut and we guarantee all lace to be perfect in every way.

78B206

½ inch, per 100 ft.	\$1.25
⅓ inch, per 100 ft.	1.50
⅔ inch, per 100 ft.	1.88
½ inch, per 100 ft.	2.75
⅔ inch, per 100 ft.	3.25
⅓ inch, per 100 ft.	3.75
50 ft. bds. ½ price of 100 ft. bds.	



Assorted Rawhide Cut Lace

For the convenience of those who do not wish to buy 50 feet of each size needed, we are putting up a special assortment, including 25 feet, each, ½, ⅓, ⅔ and ½ inch.

78B208 Price, 100 ft. assorted Lace Leather.....\$1.85

Solid Round Leather Belt



Made of the best solid leather. Pure oak tanned.

78B212

NET PRICE
PER RUNNING
FOOT

½ inch.	\$0.03
⅓ inch.	.04
⅔ inch.	.07
½ inch.	.10
⅔ inch.	.12
⅓ inch.	.35
⅔ inch.	.45
¾ inch.	.65

Steel Belt Couplings



For Round Belts or Cords

78B214 NET PRICES

Diam. Inch	Price, Each	Diam. Inch	Price, Each
½	\$0.25	⅔	\$0.25
⅓	.20	⅔	.30
⅔	.20	⅔	.40
¾	.20	⅔	.50

Elco Leather Belt Cement



Is made from the Finest Gelatines procurable, and with a twelve-hour cook is so condensed that it takes Twice the quantity of Water to Reduce it to proper consistency for use, making One Pound Go as Far as Two Pounds of Ordinary Belt Glue.

All other cements make a hard, cracky joint, stiff and hard to bend at first. The "ELCO" is a new departure in Belt Cements on account of its Greater Adhesive Qualities.

It takes a Less Quantity to make the joint, which after being made is as soft and pliable as any part of the belt.

Full directions for use on every package.

78B218 Price, in 1-pound cans.....Per can, \$1.00

Elco Wire Belt Lacing



Specially made by a secret process which adapts this lace for all the qualifications needed in lacing belts. All boxes contain 50 lineal feet of wire. Made in five sizes.

No. 0, for small belts, per box	\$0.30
No. 0, for 2 to 3½ in. belts	.35
No. 1, for 4 to 6 in. belts	.40
No. 2, for 6 to 16 in. belts	.45
No. 3, for over 16 in. belts	.50

Copper Rivets and Burrs

One Size Only, in One-Pound Boxes.

78B220

No. 7—½	56	¾	76	1	1¼ or 1½	\$0.88
No. 8—¾	12	56	76	1	1¼ or 1½	.90
No. 9—¾	12	56	76	1	1½ or 1¾	.93
No. 10—¾	12	56	76	1	1½ or 1¾	.96
No. 12—¾	12	56	76	1	1	1.00

One number and size only in each 1-lb. box.

78B222 RIVET SET AND HEADER

For Nos. 7 to 10 Rivets	Each	\$0.75
For Nos. 11 to 15 Rivets	Each	.50



Empire Washer Cutters



Cuts Washers up to 6½ inches

78B224 Price each, net.....\$1.25

Tools You Will Appreciate For Repairing

Single Tube Belt Punches



For punching holes in belting for wire lacing.

78B230 Net price, each \$0.50

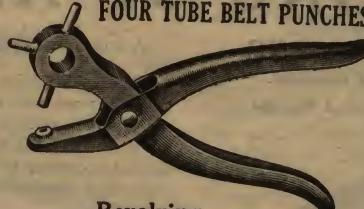
Belt Punch and Splicing Tool



Cuts $\frac{1}{4}$ -inch holes for lacing. Will catch lace and pull it through when lace only projects $\frac{1}{4}$ to $\frac{1}{2}$ -inch through belt hole. A time and teeth saver.

78B236 Net price, each \$0.60

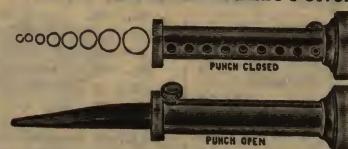
FOUR TUBE BELT PUNCHES



Revolving

Will punch four different size holes.
78B232 Net price, each \$1.00

"ROGERS" ADJUSTABLE BELT PUNCH

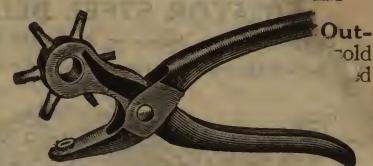


Telescopes. Can be carried in pocket. Finely tempered half round steel blade. Adjustable to cut holes $\frac{1}{16}$ to $\frac{3}{8}$ inch diameter by moving button at bottom. Is suitable for any kind of belt.

78B238 Net price, each \$0.60

Repairing dition

Six Tube Belt Punches



Out
old
d

Revolving

Will punch six different size holes.
78B234 Net price, each \$1.35

Splicing Tool and Lace Cutter



Same tool as belt punch and splicing tool with lace cutter attached. Will cut lace to size, punch holes and pull lace through.

78B240 Net price, each \$1.00

Belt Groover

This tool is very handy in lacing belts with wire lacing. It grooves a place for the lacing so that it is smooth and even at the joint.

78B242 Net price, each \$0.50



Genuine "Osborne" Round and Oval Belt Punches

THE BEST PUNCH MADE

Will outlast three ordinary punches.

No.	Size hole inches	78B244 Price, each round hole	78B246 Price, each oval hole
3	$\frac{7}{64}$	\$0.35	\$0.50
4	$\frac{1}{8}$	.36	.51
5	$\frac{9}{64}$	.37	.52
6	$\frac{5}{32}$	.38	.53
7	$\frac{1}{4}$	.39	.60
8	$\frac{7}{32}$	.40	.62
9	$\frac{1}{2}$	.41	.63
10	$\frac{9}{32}$	.42	.65
11	$\frac{11}{32}$	.44	.70
12	$\frac{3}{8}$	.46	.75
13	$\frac{13}{32}$	.60	.80
15	$\frac{1}{2}$	.75	.85

Lathrop Patent Belt Awl

The Lathrop Patent Belt Awl is provided with three holes for different size lace. It will catch the lace and pull it through when only a very small part of the end shows.

78B248 Net price, each \$0.50



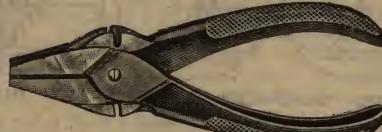
"Starretts" High Speed Indicator



Will run at highest speed without heating. Working parts encased. Dial plate has two rows of figures.

78B250 Net price (in pasteboard box), each \$1.25
78B252 Net price (in leatherette case), each 2.00

Cutters and Pliers



For lacing belts with wire. Actual size $5\frac{1}{2}$ inches.
78B254 Net price, each \$0.60

Empire Lace Cutter

A perfect tool for cutting rawhide lace leather. Adjustable so as to cut any width of lacing from $\frac{1}{16}$ to $\frac{3}{4}$ inch wide. The cost of this cutter is easily saved in cutting one side of lace leather. Each cutter



Brass Stencils



We can furnish Brass Stencils of any size or shape. Send diagram showing lettering. State size of stencil and height of letters.

Prices on Application

Stencil Brushes



78B255

The bristles in these brushes are very thick and stiff enough to be very durable and at the same time hold the ink and transfer it to the stencil. No better stencil brush made. Furnished in two sizes.

No.	Diam.	Price each	Doz. lots
6	$1\frac{1}{8}$ in.	\$0.45	\$4.50
12	$1\frac{1}{4}$ in.		

Stencil Ink



Net Prices including Can and Sponge

$4\frac{1}{4}$ Diam. Cakes
Net Prices
Ink only

	Each	Doz.	Each	Doz.
Black	\$0.30	\$3.00	\$0.50	\$5.50
Blue	.60	6.00	.75	8.50

LACELT HOOKS OF ALL KINDS

Raw LIGATOR STEEL BELT LACING

Soft. Apply with a hammer, no other tools required.

Especially adapted for Rubber, Cotton and Canvas
Stitched Belting.



78B300 SIZES AND NET PRICES.

No. 15. For belts $\frac{1}{8}$ to $\frac{5}{16}$ inches thick. Box contains 64 inches of lacing in 8-inch lengths..... \$1.50

No. 25. For 3-ply and Single Leather Belts $\frac{1}{8}$ to $\frac{7}{32}$ inches thick. Box contains 48 inches of Lacing in 8-inch lengths.... \$1.50

No. 27. For 4-ply Rubber and Cotton Belts $\frac{1}{4}$ to $\frac{9}{32}$ inches thick. Box contains 96 inches of lacing in 12-inch lengths... 3.15

A separable lacing, hinging on a rawhide or sectional steel rocker pin.

The flexible joint insures quick contact with the pulley, whether the belt is run with either or both sides in service, and as the lacing engages both sides of the belt alike, the strain is thrown in a direct line of the pull, making a joint which is easy on the belt, and where applied according to directions will stand any strain put on a belt under any conditions of service.

With rubber or cotton belting this lace overcomes the tendency to fray at the ends, as the members of the lace clamp the stubs so as to protect them.

Will work perfectly in contact with an idler.

No. 35. For 5 to 6-ply Rubber and Cotton Belts and Double Leather Belts 9/32 to $\frac{1}{4}$ inches thick. Box contains 32 inches of Lacing in 8-inch lengths..... 1.35

No. 37. Same as No. 35 size, but box contains 48 inches of Lacing in 12-inch lengths..... 2.00

No. 45. For 6-ply Rubber and 6 to 8-ply Cotton Belts, Heavy Double Leather Belts. Box contains 48 inches of Lacing in 12-inch lengths..... 2.70
Extra Pins, per dozen..... .50

The Only Zig-Zag Hook with Solid Back—Drives Better—Holds Longer—Costs Less. For All Kinds of Belts Over All Size Pulleys.

OUR GUARANTEE

We will put the STAG in the same belt, running under the same conditions, with any other hook or lace and guarantee it to run longer, and with less expense; that it will run over a smaller pulley than any other hook, and that it can be applied in one-fourth the time it takes to lace a belt with leather or wire lacing.

DIRECTIONS FOR USING STAG STEEL BELT HOOKS.

Cut No. 1. Cut both ends of belt square and place on piece of soft wood.

Cuts Nos. 2 and 3. In applying hooks to very hard belting, especially when using larger size hooks in thick new belts, place hooks on and tap lightly to mark where teeth will enter belt, then make holes with a pointed awl, replace hooks, drive through and clinch as directed.

Cut No. 4. Never strike the hooks a hard blow in the center of main body, but after they are fairly started in the belt, direct the blows over the points, first one side and then the other. This keeps hook in its original shape, thereby keeping its maximum strength and will insure a close joint.

Cuts Nos. 5 and 6. After having driven points of hooks through, turn belt over and bend extreme end of points a trifle to give it better holding qualities. Always bend points towards joint. Hammer down firmly (do not smash). Bend only one point at a time. Never try to drive the hooks through a piece of iron or pulley, but use a soft piece of wood, and in clinching bend one point at a time, **always toward joint**.

Cut No. 7. Always run clinched side against pulley.

NOTE:—Use the hooks alternately, as shown in cut.



78B306 SIZES AND NET PRICES, PER BOX.

No. 00. For Light Leather, Rubber or Cotton Belts. $\frac{1}{8}$ to $\frac{5}{32}$ inch thick, $\frac{3}{8}$ to 3 inches wide. Packed 200 in a box... \$0.55

No. 0. For Light Leather, Rubber or Cotton Belts. $\frac{1}{8}$ to $\frac{1}{4}$ inch thick, $\frac{3}{8}$ to 3 inches wide. Packed 200 in a box..... .65

No. 1. For Single Leather, 3-ply Rubber or Cotton Belts, 1 to 5 inches wide. Packed 100 in a box..... .40

No. 2. For Heavy Single or Light Double Leather, 4-ply Rubber or Cotton Belts, 1 to 8 inches wide. Packed 100 in a box..... .65

No. 3. For Double Leather, 4 to 6-ply Rubber or Cotton

Belts, 1 to 12 inches wide. Packed 100 in a box..... 1.15

No. 4. For Heavy Double Leather, 6 to 8-ply Rubber or Cotton Belts, 1 inch wide and up. Packed 100 in a box..... 1.65

No. 5. For Extra Heavy Double Leather, 6 to 8-ply Rubber or Cotton Belts, $\frac{1}{2}$ to $\frac{1}{4}$ inch wide and up. Packed 100 in a box.... 2.70

No. 6. For Extra Heavy Double Leather, Rubber or Cotton Belts, from $\frac{1}{2}$ to $\frac{1}{4}$ inch thick, $\frac{1}{2}$ inch wide and up. Packed 100 in a box..... 3.65

No. 7. For Belts $\frac{3}{8}$ to $\frac{1}{4}$ inch thick and Extra Heavy Conveyor Belts, 2 inches wide and up. Packed 100 in a box..... 5.50

OVAL POINTED BELT HOOK

78B302

No.	Length	Number in Box	Price Net, Per Box
15	22/32 inch	250	\$0.25
14	23/32 inch	250	.30
13	3/4 inch	500	.65
12	25/32 inch	250	.35
11	29/32 inch	500	.75
10	1 1/32 inch	250	.45
9	1 1/8 inch	250	.50
8	1 1/4 inch	250	.65
7	1 18/32 inch	250	.75
6	1 3/4 inch	250	1.00
5	2 1/32 inch	250	1.90
4	2 10/32 inch	100	.70

78B304

LX STEEL BELT HOOKS

No. 0 For single leather.

No. 00 For double leather.

No. 1 For all belts less than 4-ply.

No. 2 From 4 to 6-ply.

No. 3 From 6 to 10-ply.

Price net, per box of 200, any size..... \$0.35

We Carry A Full Line of Belting—Leather, Rubber, Balata, Cotton, Stitched Canvas. See Pages 3 to 13 Inclusive.

With These Articles You Can Keep Your Belts in Best Condition

**Handiest
and most
complete
Outfit on
the Market**



The screws have square heads and rapid pitch and are made of wrought iron.

These clamps are used for tightening and putting together large belts, and combine strength, simplicity and convenience.

78B352 Sizes and Net Prices

No. 270, for belts 6 to 12 inch, each.....	\$ 9.60
No. 271, for belts 12 to 18 inch, each.....	11.90
No. 272, for belts 18 to 24 inch, each.....	14.40
No. 273, for belts 24 to 36 inch, each.....	20.00

"ELCO" BELT DRESSING



The substance of our "Elco" Belt Dressing is an Animal Fat (Wool Fat), the grease that is extracted from sheep's

wool before woven into cloth.

We use only the imported, on account of its purity, being free from alkalies and acids. Tanners use the same for stuffing or softening a hide after tanning, it being the only Pure Animal Grease obtainable. It cannot injure the belt.

The "Elco" is the natural color of the wool fat, Brown, and is guaranteed pure. **Stops the Slipping. Slipping Destroys More Belts than Any Other Cause.**

In 1-pound sticks, always ready for immediate use. Held to moving belt, applies just enough. Contains no resin or mineral grease. Superior to all others.

78B354

Net price, per 1-pound stick, each.....	\$ 0.35
Net price, per dozen 1-pound sticks.....	3.50

"VISCOL" LIQUID BELT DRESSING

Preserves your belt, increases its friction 50 per cent, allowing a much looser belt avoiding unnecessary friction caused by high tension of belts; makes belt impervious to water, fumes and gases. Does not make your belt soggy, as do many other belt dressings.

78B356

Net price, 1½ pint can, each.....	\$ 0.95
Net price, 4 pint can, each.....	1.75



GUMP'S LEATHER BELT DRESSING

Made of pure animal and fish oils, which will add years of life to your new belts and rejuvenate the old ones. This dressing is not specially adapted for keeping your belts from slipping, as it is for lubricating and adding life to the fibres of leather of which your belts consist thereby increasing elasticity and traction power. In 1-gallon cans only.



GUMP'S BELT REPAIR TOOLS

The illustration shows a **Complete Belt Repair Outfit**, as used by **professional Belt Makers**. We have sold these belt tools for many years, but have never listed the outfit **complete**, we believe it to be one of the **handiest and most complete** outfits on the market and will fill a long-felt want in mills, factories and shops, where there is occasion to repair belts or put up new ones.

The tools are all **high grade**, the same as used in the largest belt factories.

Net Prices, Separate Tools or Complete Outfit

78B350

Glue Heater.....	\$ 2.65	Turning Steel.....	\$ 1.00
Glue Brush.....	1.75	Finger Steel.....	.75
Belt Scraper.....	.75	Screw Driver.....	.35
Belt Heeler.....	1.25	Belt Knife.....	.50
1 pound can "Elco" Leather Belt Cement.....			\$ 1.00
Net Price (Complete as shown).....			9.50

Note.—Glue Heater has Copper Pail and Cup.

IRON SCREW BELT CLAMP

The frame is made of rock maple, with jaws corrugated, which makes it practically impossible for belt to slip after having been properly placed in clamp.



"BULL DOG" PULLEY COVERING CEMENT

Cover Your Own Pulleys, Iron or Wood

BULLDOG BELT COVERING CEMENT WILL HOLD TO EITHER IRON OR WOOD PULLEYS, LARGE OR SMALL.

Full printed directions on every can. Use your own canvas or we can supply the canvas if desired at small cost. Will keep for years if can is kept tightly closed. Will cover 10 square feet.

Regular size cans 1½ pounds, We recommend No. 6 duck or canvas for general use.

78B362—Price, net, per can..... \$ 2.25

78B364—No. 6 Canvas Ducking, per square foot.... .20

Minimum charge for Canvas Ducking..... .50



LEATHER PULLEY COVERING

Made of high grade leather, even in thickness, any length or width. 78B366—Price per square foot, net..... \$ 1.50

We can cover your New Pulleys when ordered with thin high grade Leather, and guarantee the covering not to come loose, without punching rivet holes in them, thus weakening the pulley. Net, per square foot.....

\$ 2.25

"ELCO" FRICTION BELT PAINT

For Red Stitched Canvas Belts

An elastic paint which preserves the life of the belt, waterproofs it and increases its traction. A belt painted when stored away will retain its life and pliability and will not deteriorate. Apply on both sides with a common paint brush after thoroughly cleaning belt. Allow to dry before using. Put up in gallon cans.

78B368—Price per 1-gallon can net..... \$ 2.95



Necessary Accessories for Mill or Elevator

Gump's Respirator Protects the Nose and Mouth



Has an improved automatic valve which compels a positive action in excluding dust, fumes or gases.

Can be worn constantly without inconvenience.

The heated air between face and cover is automatically exhausted and renders wearing it a comfort and pleasure.

A fine damp sponge is the best known filter for separating impurities from the air, and this, in connection with the automatic valve insures perfect protection and ventilation. The sponge can be removed and rinsed in water to clean it and replaced in one minute. The wearer will be readily convinced of the great value of the Protector when he sees what the sponge has absorbed.

The automatic valve is so simple that it cannot get out of order and will always act, no matter what position the wearer assumes at his work.

This Protector is made of the best white rubber, and is easily kept clean. It bends to fit any face perfectly and is fastened to the head with an adjustable elastic band.

Net Price

78E400—Gump's Rubber Dust Protectors, each.....\$1.20

Postpaid anywhere in the United States for above price.

Cover's Rubber Goggles

The Goggles fit well with the Respirator; they are made of a single piece of pure rubber and are indestructible. The lenses are clear glass and can be removed, cleaned and replaced in a moment. The cushion is a curved flange extending downwardly and outwardly from the lens portion. It has no filthy pads and is easily kept clean. Used largely in Foundries, Fire Departments, Chemical Works, and by Grinders, Polishers, Threshers, Automobiles, etc. Fits anybody, air tight, but are furnished ventilated if desired. Should be air tight for use in irritating gases, lime, etc., but ventilated when used in most other places. We will send ventilated goggles unless otherwise ordered.

78E402—Cover's Rubber Goggles, per pair (postpaid).....\$1.15



Durant Flour Tally



These well known machines, applied to packers, show the product at a glance, in figures that can be absolutely relied upon. Furthermore, they furnish a check against shipping errors and do away with the slow

and doubtful hand count. By the introduction of very heavy all steel parts these machines have now been so strengthened that breakage and trouble are unheard of. We also have made them better adapted to packer use than ever.

Net Prices

78E404—
No. 1, 4 dials (Counts 9,999).....\$6.25
No. 2, 5 dials (Counts 99,999).....7.25

Guarantee—Every Durant Tally is warranted to be free from imperfections in material and workmanship for two years.

Lever Attachment is in very general use on flour and bran packers where barrels or sacks of one size are filled. It is indeed a simple and effective means for applying the tally to any packer and prevents registering the count until the package is practically full. Of the 20,000 Durant Tallies in use, over two-thirds of them are equipped with Lever Attachments.

Lever Attachments.....\$1.00

Durant Pocket Hand Tally

The Perfect Counting Machine---Guaranteed Accurate

Used by Railroads, Telegraph and Steamboat Men, Lumbermen, Cattlemen, Head-waiters and in fact, anyone desiring an accurate count. Can be set to zero at will; very simple in construction, durable and satisfactory.

Net Price

78E406—No. 3, 3 dial, counts to 999, each.....\$3.00
No. 4, 4 dial, counts to 9,999, each.....4.00



The "Fire-Gun" Fire Extinguisher



The Only Quart Fire-Extinguisher Favorably Reported Upon by All Insurance Companies.

A Hand Fire Extinguisher, which puts out little fires before they become big ones. Effective where water is useless. The only fire-fighting device with a real double-acting liquid pump. Always ready for use—does not stick. Reduces automobile insurance 15%.

Fire gun fluid will not deteriorate, is a non-conductor of electricity, does not freeze at 50° below zero, and forms a blanket of non-combustible gas, which smothers the flames as soon as it strikes heat.

78E408—No. 1 Fire Gun, capacity 1 quart. Weight, 7 lbs. Complete with liquids.

Each.....\$8.50

Extra charges, 1 quart..\$1.50.

Combination Sprayer and Fire Bucket

An "Ideal" Combination Pump Suitable for Many Purposes Bucket Capacity Six Gallons

This combination sprayer and fire pump is worth many times its cost. It will do all the spraying, whitewashing, cold water painting and window washing, as well as affording an excellent fire protecting outfit.

For spraying or whitewashing it will meet all requirements satisfactorily as it throws a strong, steady stream or spray as desired.

FOR FIRE PROTECTION it is economical and quick working. It throws an unbroken stream forty feet from the nozzle, beginning immediately when the pump is operated. It enables the operator to play a steady stream on a fire not over 40 feet away.

THE PUMP is a powerful double acting pump working on both the up and down stroke. It has a heavy brass cylinder, heavy brass plunger, brass ball valves and a sure-grip handle. It should last a lifetime. IT IS ALSO EQUIPPED with a 3-foot hose and two nozzles, one for solid stream and one for spraying.

THE TANK is made of heavy galvanized steel with cover for filling and handle for carrying. It has a capacity of 6 gallons, painted red. Shipping weight, about 15 pounds.

78E410—Fire Bucket and Tank Sprayer, complete.
Price, each.....\$6.95



NECESSARY EQUIPMENT FOR MILLS

"Elco" Sewing and Tying Twine



4-Ply "Elco" Twine

Our "Elco" brand Sewing and Tying Twine is absolutely stainless. No. I Jute Twine, guaranteed high grade, put up in rope form, 50 and 100 pound bales, containing 50 ends, so that with one cut 50 strings may be had of lengths desired.

Net Prices—4-Ply

78E420

In Full Bales of 100 Pounds

"Elco" Brand Twine, per pound.....	\$0.24
Less than Full Bales.....	.27

"Elco" Brand Twine, per pound..... .27

Spring and Solid Eye Sacking Needles

Net Prices Spring Eye Curved

Length Inches	Per Dozen	Each
3½	\$5.50	\$0.50
4	5.50	.50
4½	5.50	.50
5	5.50	.50
5½	5.50	.50
6	5.50	.50
78E423 Straight		
4	4.50	.40
4½	4.50	.40
5	4.50	.40
5½	4.50	.40
6	4.50	.40

Net Prices Solid Eye Imported High Grade

L'gth, Inches	Each	Per Dozen	Per Gross
3½	\$0.05	\$0.50	\$5.00
4	.06	.60	6.00
4½	.07	.70	7.00
5	.08	.80	8.00
5½	.09	.90	9.00
6	.10	1.00	10.00
7	.15	1.50	15.00
8	.20	2.00	20.00
9	.25	2.50	25.00

Imported goods prices are quoted subject to obtaining stock.

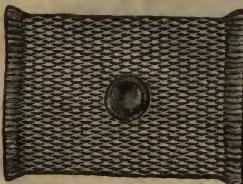
Cloth Cleaners

For cleaning Cloth in Sieve Bolting Machines. Travels to all extremities of the sieve without wear on the cloth, which enables full capacity of bolting.

78E425

Price each net..... \$0.10

Note.—Special Price quoted on large lots.



Ideal Round Brush Cleaners

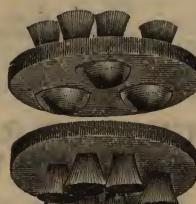
A round high grade 2-inch leather disc with 3 brass spots on bottom for wire cloth and extra fine bristles on top side for silk. Minimum wear on cloth and frames. Cleans perfectly.

78E426

Price each..... \$0.18

Price per dozen..... 1.80

Price per gross..... 18.00



Double Jack Chain

For Cleaning Wire Cloth; Cuts Full Size of No. 15-18 and 20

78E427

No. 15, per box of 12 yards..... \$0.90

No. 16, per box of 12 yards..... .80

No. 17, per box of 12 yards..... .75

No. 18, per box of 12 yards..... .70

No. 20, per box of 12 yards..... .65

We do not sell less than a box.



Grain Trimmer's Scoop

"D" Handle—Polished



Crucible Steel

A convenient size scoop for trimming grain or filling bags.

Net Price

Sterling Hack Saw

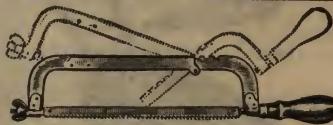
Iron Frame

78E2072	For 9-inch Blades
Price each.....	\$0.35

Adjustable Frame

8 to 12 inches.

Finest and most serviceable frame made.



78E2074	Net Price, highly polished, each.....	\$0.75
78E2076	Net Price, Nickle Plated, each.....	\$1.00

Sterling Hack Saw Blades

Regular Teeth, 14 to the Inch, for Sawing Solid Steel or Iron

78E2078	Net Prices
Size, in.....	½x8 ½x9 ½x10 ½x12

Per doz.....	\$0.70	\$0.75	\$0.85	\$1.00
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Fine Teeth, 24 to the Inch, for Sawing Brass, Copper, Pipe and Tubing.

78E2080	Net Prices
Size, in.....	½x8 ½x9 ½x10 ½x12

Per doz.....	\$0.75	\$0.80	\$0.90	\$1.05
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Round Bottom Galvanized Fire Buckets

Stenciled "Fire Bucket"

Made of Heavy Galvanized Iron. Nested, 1 dozen in bundle. The round bottoms prevent them from being used for purposes other than Fire Protection.

78E432	Net Prices
No.	Capacity Quarts Size, Inches Net Price per Dozen Net Each

212	12	11 x 10 ¼	\$4.75	\$0.50
214	14	11 ½ x 11 ½	5.25	.60

Galvanized Grain Baskets



Side Handles Corrugated Bottoms

Note.—No. 11 Basket is graduated for ½, 1 and 1 ½ pecks. All sizes packed ½ dozen in bundle.



Style 11	Sizes and Net Prices
Capacity, bushels.....	½x9 1 1 ½

Size, inches.....	13 ¾ x 11 ½	17 ¾ x 11 ½	20 x 13 ¼
Net Price, dozen.....	\$8.50	\$12.00	\$15.50

Net Price, each..... .85

1.20

1.55

1.85

2.00

2.20

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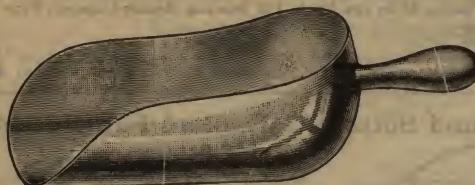
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62.5

MILL AND WAREHOUSE NECESSITIES



SOLID ALUMINUM SCOOPS



Are without an equal. They are practically indestructible, and are free from objections possessed by other metals.

78E452

Net Prices

Number.....	0	1	2	3
Length, ins., (scoop only).....	5	7½	9	10
Width, inches.....	3	4	5	5½
Net Price, dozen.....	\$8.50	\$18.00	\$21.50	\$25.00
Net Price, each.....	0.85	1.89	2.15	2.50

RETINNED FLOUR SCOOPS



HEAVY TIN WELL MADE

78E454

Net Prices

Number.....	20	30	40
*Length, Inches.....	6½	8	9¾
Width, Inches.....	4½	5½	6¾
Net Price, Dozen.....	\$4.50	\$5.00	\$6.00
Net Price, Each.....	.45	.50	.60

*Length from mouth to base of handle.

"GUMP'S" ALLCORN MILL BROOMS



For sweeping Floors, Cars, and Platforms.

Are made of selected Broom Corn, nicely finished, with machine turned hardwood handles. Sewed with heavy waterproof waxed twine and bound with stout steel band.

78E456 Weighing 32 lbs. per dozen. For office and light and medium sweeping.
Price each..... \$0.70
Price per dozen..... 7.00

78E457 Weighing 36 lbs. per dozen. For mills and elevators and for medium and heavy sweeping.
Price, each, net..... \$ 0.80
Price per dozen..... 8.00

78E458 Weighing 40 lbs. per dozen. For warehouses, platforms and for heavy sweeping.
Price each, net..... \$ 0.90
Price per dozen..... 9.00

CLIMAX SCOOP TRUCK

Capacity, 2½ Bushels of Grain, or 200 Pounds Coal

The Climax Scoop Truck is a wonderful time and labor saver. It is a scoop on wheels, designed to increase the efficiency from six to ten-fold of a man unloading coal, grain, etc., from ends of box cars or bins. It will operate satisfactorily in moving material where the discharge is at floor level or from an inclined runboard two or three feet above the floor level. The BOWL is pressed No. 10 gauge steel with a corrugation to form a housing for the wheels and a seat for the handles. A practicable and durable scoop that will pay for itself many times over in time and labor saved. Weight about 50 lbs. 78E450 Net price, each..... \$17.50

CHAMPION FLOUR SCOOPS

Made of Sheet Steel. Wrought Iron handle, placed in the center instead of at the end, distributes the weight evenly, thus making the handling of material easier and quicker.

78E462

Sizes and Net Prices

Size	Length Inches	Price, each Sheet Steel
8.....	8	\$.90
10.....	10	1.00
12.....	12	1.20
14.....	14	1.50



HERCULES STEEL SCOOPS



Our Hercules Steel Scoop is made of planished sheet steel securely riveted, strong and durable. Will outwear and is much more convenient to handle than the ordinary "D" handle scoop.

Made in ½ and one bushel sizes.

Net Prices

78E464 ½ bushel.....	Each \$2.30
78E466 1 bushel.....	Each 2.80

"GUMP'S" RATTAN MIXED MILL BROOMS

Made of selected Broom Corn mixed with Rattan Reeds, making the Broom more efficient for sweeping heavy rubbish, etc. Sewed and bound same as our All Corn Mill Brooms



Showing the Center of Rattan Mixture

78E459	Weighing 36 lbs. per dozen	\$ 0.85
Price each, net.....		8.50

78E460	Weighing 40 lbs. per dozen	\$ 0.95
Price each, net.....		9.50

OUR SPECIAL SAMPLE OFFER

To introduce to our customers the different weights and kinds of Brooms listed, we furnish one dozen Brooms, assorted as follows: (4 No. 76E456, 2 No. 457, 2 No. 458, 2 No. 459, 2 No. 460.)

78E461 Price, Special Sample Lot..... \$8.00

BABBITT METAL, LADLES, BELLOWS AND TOOLS



"MAGNOLIA"
(Anti-Friction)
BABBITT
METAL



The best anti-friction Babbitt Metal for bearings of all descriptions on High or Low Speed Machinery, Engines, Dynamos, Motors, etc. A non-cutting power-saving self-lubricant metal which will remedy complaints of hot boxes, worn journals and other troubles well known to the users of machinery and other accessories.

78E480 Price, per pound..... \$0.30

Special Prices on large quantities

Note—Put up in bars of about 7 pounds each.

ELCO BABBITT METAL



This metal can be used for bearings of any description, dynamos, flour, planing and sawmills, agricultural machines, steam and gas engines, and, in fact, wherever good service, under general conditions, is required.

The ingredients of "ELCO" permit its use in place of genuine metals, as the amalgamation is perfect.

78E482 Net price, per pound..... \$0.20

Note—Made in bars weighing about 5 pounds. We do not sell less than one bar.

78E484

Standard Brands

No. 1—Per pound.....	\$0.15	| No. 4—Per pound.....	\$0.09
No. 2—Per pound.....	.12		

Note—Made in bars weighing about 10 pounds. We do not sell less than one bar.

BABBITT MELTING LADLES



These ladles are drop forged of extra heavy mild steel and well made in every respect.

78E496
Diameter, inches..... 2½ 3 3½ 4
Price, each..... \$0.40 \$0.50 \$0.55 \$0.60

Diameter, inches..... 5 6 7 8
Price, each..... \$0.70 \$0.80 \$2.00 \$2.75

We can furnish genuine Babbitt and Solder. Prices on application.



HAND BELLOWS

For cleaning up around machines and various other purposes.

78E494

Price Each, Net

8 inch.....	.....	\$1.25
10 inch.....	.....	1.60
12 inch.....	.....	2.00

Blacksmiths Hammer



Extra Quality High Polish

78E2022 Sizes and Net Prices

Number.....	0	1	2	3
Weight.....	1 lb. 10 oz.	2 lb.	2 lb. 10 oz.	3 lb.
Price, Each.....				

LE PAGE'S LIQUID GLUE

Always ready for use. For all kinds of woodwork, leather, paper, etc.

No glue pot needed, no cooking required. Once tried, always used.



78E486

Net Prices

Size of Cans	Price per doz. Cans	Price per Can
½ Pint.....	\$ 4.50	\$0.45
1 Pint.....	7.00	.70
1 Quart.....	12.00	1.20



Perfect Handle Screw Drivers

A Solid One-Piece Drop Forging.

Oval shaped wood handle gives greater leverage, fits the hand better and is more comfortable than other shapes. Tempered correctly. Each carefully tested and fully warranted. Nothing better made.

78E2114 Sizes and Net Prices

Length of blade.....	4	5	6	8	10
Diameter of Blade.....	¼	¼	½	¾	¾
Price, each.....	.35	.45	.55	.75	.95



TINNERS' SNIPS

Forged from Solid Steel

78E2082

Sizes and Net Prices

Size	Length, Ins.	Cut, Ins.	Weight Each, Lbs.	Price Each
10	10	2½	1	\$2.15
9	11¾	3	1½	2.35
8	13	3½	2	2.65

COLD CHISELS AND PUNCHES

High Grade Guaranteed



78E2068 Chisels

½x6 each..... \$0.25

½x6½ each..... .35

¾x7 each..... .45



78E2070 Punches

½x8 each..... \$0.35

¾x9 each..... .45



Nail Hammers

The highest grade hammer made.

78E2010 Weight, ¾ lbs. Each..... \$1.60

78E2012 Weight, 1 lb. Each..... \$1.65

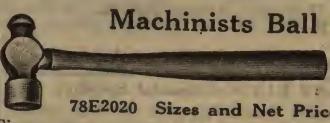


Adze Edge Riveting Hammers

Plain Eye, High Polish and Tempered, Blued.

78E2014 Sizes and Net Prices

Size	1	2	3	4
Weight, oz.....	7	9	12	15
Price, each.....	\$0.95	\$0.99	\$1.05	\$1.10



Machinists Ball Pein Hammers

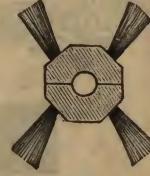
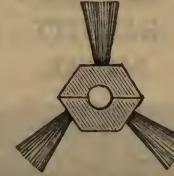
Drop Forged best tool steel, well balanced and guaranteed in every way.

78E2020 Sizes and Net Prices

Size...	.00	0	1	2	3	4
Weight, oz.....	12.65	14.65	17.65	20.65	23.65	26.65

Revolving Round and Centrifugal Reel Brushes

We are able to supply brushes in any of the styles shown below with any number of rows of bristles on short notice. We can furnish the brushes in any length desired. If brushes are wanted for special work or on special machines, state the kind of work they are to be used for and send a diagram showing the dimensions of the brush if it is not possible to send an old brush as a sample and we will quote on a special brush made up in the way you desire.



A-1

A-2

A-3

B

C

The above illustrations show the different styles of brushes we can regularly furnish. We are unable to show each style with the different rows of bristles that can be furnished, although the illustrations will enable you to determine exactly how these different styles will be furnished. Style A-1 shows a brush with one row of bristles on two sides. Style A-2 shows a brush with two rows of bristles on two sides. Style A-3 has three rows of bristles on two sides. Style B shows a brush with one row of bristles on three sides. This same style of brush can be furnished with either two or three rows of bristles on each of the three sides, as shown in Styles A-2 and A-3. Style C shows a brush with one row of bristles on four sides. This style can also be furnished with two or three rows of bristles on each of the four sides if wanted. The different styles and prices shown below. Bristles not over $2\frac{1}{2}$ inches in length. Where bristles are desired for wire cloth, we recommend our Basine Fibre, and will make Basine Brushes in the same styles as our Black Bristle or horse-hair brushes.

78E500

Net Prices per Foot for Round and Centrifugal Reel Brushes

STYLE A			STYLE B			STYLE C		
Has Bristles on two Sides of the Brush.			Has Bristles on Three Sides of the Brush			Has Bristles on Four Sides of the Brush		
A-1 Price One Row Bristles on Each Side	A-2 Price Two Rows Bristles on Each Side	A-3 Price Three Rows Bristles on Each Side	B-1 Price One Row Bristles on Each Side	B-2 Price Two Rows Bristles on Each Side	B-3 Price Three Rows Bristles on Each Side	C-1 Price One Row Bristles on Each Side	C-2 Price Two Rows Bristles on Each Side	C-3 Price Three Rows Bristles on Each Side
Without Shaft—per ft.	Without Shaft—per ft.	Without Shaft—per ft.	Without Shaft—per ft.	Without Shaft—per ft.	Without Shaft—per ft.	Without Shaft—per ft.	Without Shaft—per ft.	Without Shaft—per ft.
Horse Hair \$1.00	Horse Hair \$1.15	Horse Hair \$1.50	Horse Hair \$1.35	Horse Hair \$1.40	Horse Hair \$1.65	Horse Hair \$1.30	Horse Hair \$1.50	Horse Hair \$1.75
Basine \$1.30	Basine \$1.80	Basine \$2.30	Basine \$1.65	Basine \$2.00	Basine \$2.50	Basine \$1.85	Basine \$2.25	Basine \$2.75

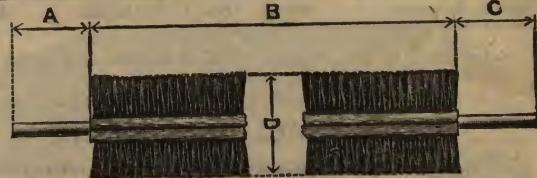
Extra for $\frac{1}{2}$ inch Shaft in Brushes, per foot \$0.15 Extra for $\frac{1}{4}$ inch Shaft in Brushes, per foot \$0.20

Brushes can be made for any size shaft. Be sure to mention for what size shaft when ordering. For total length of Shaft add together measurements designated by "A," "B" and "C."

DIAGRAM SHOWING SIZES TO GIVE IN ORDERING BRUSHES

Made up to Order—Made of Horse Hair or Basine Fibre as ordered.

"A"—Length of shaft at drive end. "B"—Length of brush. "C"—Length of shaft at tail end. "D"—Width of brush. Be sure to state all dimensions when ordering. Bristles Not Over $2\frac{1}{2}$ " Long.



FLAPPER BRUSHES FOR ROUND REELS USING COARSE WIRE CLOTH



These brushes are popular for use on round reels which are clothed with coarse wire cloth. They consist of leather strips securely fastened to a square, hard wood stick. These strips slap the wire cloth and knock out any particles lodged in the wire. They are durable, excellent cleaners and easy on the cloth.

78E502 Price per foot, net \$1.50

Shaft extra—See Brushes above.

"LITTLE WONDER" REEL BRUSHES



Made of Genuine Horse Hair with Rubber Backing for use on "Little Wonder" Centrifugal Reels. The best Brush for this purpose.

78E512 Price, per foot, net \$0.90

Note.—We make these brushes in any length desired.

We Can Furnish ANY KIND of Special Brushes

We are prepared to furnish Special Brushes for any special machine. Send us a diagram of the brush, or if possible, send us an old brush for a sample. :: :: Prices on Application.

MACHINE BRUSHES

Round Reel, Scalper and Bran Duster Brushes



We can furnish Machine Brushes of any style or size. State size of block, number of rows and length of bristles, and length of block.

Net Prices—Standard Brushes Per ft.

78E504 Round Reel, Horse Hair Filling.....	\$0.80
78E506 Scalper, Horse Hair Filling.....	.80
78E508 Bran Duster, Mixed Fibre, Horse Hair and Bristle Filling.....	.85
78E510 Purifier, Horse Hair Filling.....	.80

WHIPPER FOR BRAN DUSTER



This brush is made of one row of Horse hair wired into a wooden stick. The hair is four inches long and the stick is $\frac{3}{4}$ " wide and $\frac{1}{8}$ " thick.

78E514 Price, per running foot \$0.95

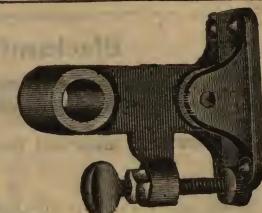
REEL BRUSH HOLDERS

Adjustable. Net Prices, Per Pair

78E516 For $\frac{1}{2}$ -inch shaft... \$2.50

78E518 For $\frac{1}{4}$ -inch shaft... 2.75

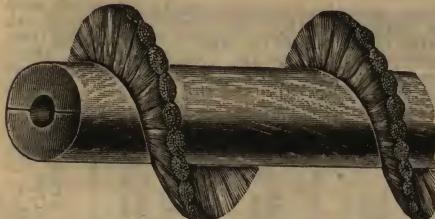
Price each, one-half the price of one pair.



Mill and Elevator Brushes and Equipment

ROUND AND CENTRIFUGAL REEL REVOLVING SPIRAL BRUSHES

Are always in contact with the cloth. The Perfect Reel Brush can be furnished with any number of rows of bristles.



Shaft extra—see opposite page.

These brushes are preferred by many to a brush with the rows of bristles running lengthwise of the brush as the spiral brush is always in contact with the cloth which is not the case with any other type of revolving brush. This brush can be used on any round or centrifugal reel for flour, sugar, cocoa or for any purpose for which a round reel may be used. Any number of rows of bristles can be furnished when desired. We show these brushes regular as listed below with one, two or three rows of bristles but for some work such as in reels for bolting cocoa and material of like nature we can supply a brush with bristles over the entire surface. We can furnish any kind of brush desired for special machines. If you want a special brush send us a diagram showing the size and dimensions or an old brush for a sample and we will quote on a brush to suit your requirements. Brushes regular with $2\frac{1}{2}$ inch hardwood stick, with $1\frac{1}{2}$ inch bristles, 8 inch pitch. Use dimension diagram in ordering as shown on opposite page.

78E520

Price net per foot—single row black horse hair.....

\$0.85

Price net per foot—double row black bristle horse hair.....

1.15

Price net per foot—single row basine.....

1.60

"BUG CHASER" TRUNKING BRUSHES

Allow No More Moths In Your Elevator Legging

"BUG CHASER" TRUNKING BRUSHES WILL CHASE THEM AND KEEP THEM CHASED



Showing a "Bug Chaser" properly attached to an Elevator Belt.

"Bug Chasers" provide a simple and sure way of keeping moths out of Elevator Legs. The complete equipment for your entire line of elevators requires but a small outlay and rids the legs of moths. Easy to attach and well made, with strong and durable bristles of tampico fibre. Will last a long time and give the best of service.

Attaching two or more of these brushes to each elevator belt enables you to keep the trunks clean and therefore free from vermin, which readily reproduce in places where mill products are allowed to adhere and rest.

Manufactured in all sizes to order to conform with the inside dimensions of the trunking.

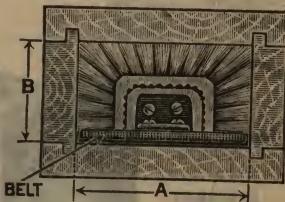
Every elevator in the mill should be equipped with two or more of them.

In ordering, give these dimensions:

"A" (Width) The distance between the filler boards of the elevator leg. This line is parallel with the elevator belt and is inside measurement of the face boards.

"B" (Projection) The inside distance between the face boards of the elevator. This line is at right angles with the elevator belt and is the inside measurement of the filler boards.

NOTE:—"Bug Chaser" Brushes are made up to special order from the specifications given in the customer's order and if dimensions are as those given cannot be exchanged or returned.



SIZES AND NET PRICES

	Each	Per Doz.
78E530—Largest dimension under 5", (not incl.)	\$0.75	\$ 7.50
78E532—Largest dimension between 5" to 6", (not incl.)	.85	8.50
78E534—Largest dimension between 6" to 7", (not incl.)	.95	9.50
78E536—Largest dimension between 7" to 8", (not incl.)	1.10	11.00
Largest dimension 8" and over.....		Prices on application
Price per dozen is for brushes of one size only.		
Two $\frac{1}{4}$ " x $\frac{1}{4}$ " elevator bolts furnished with each brush		

BE SURE
to give us the Correct
Measurements
A and B.
See Instructions
for Ordering.

FLOOR BRUSHES

Polished Hardwood Blocks, Threaded Handle Holes,
with Polished Handles.



With Mixed Bristles

"Gump's Special"

Our "Gump's Special" Floor Brush is made in the same manner as our "Mill Special" Counter Brush, entirely of mixed bristles 4 inches long, with polished hardwood block and handle. We guarantee this brush to be as good or better than any brush made for the purpose, and will replace them if found otherwise.

SIZES AND NET PRICES

78E540

Size 108.	"Gump's Special," 14-inch block..	Each \$2.45
Size 110.	"Gump's Special," 16-inch block	Each 2.75
Size 112.	"Gump's Special," 18-inch block..	Each 2.90

BRUSHES FOR ALL USES

We can furnish brushes of all descriptions and for all purposes. Prices on application. State size of blocks, kind and length of brush and all information.

COUNTER OR MILL BRUSHES

No. 7 Mill Special—With Mixed Bristles



This is an extra high grade brush, made of mixed horse-hair and bristles, with a highly polished hardwood handle. Bristles are three inches long. Length from base of handle to tip of brush 14 inches.

SIZES AND NET PRICES

78E538	Size 7. Mill Special.....	Each \$1.35
	Size 7. Mill Special.....	Per dozen \$15.00

ROLLER MILL BRUSHES



Made with three rows of Tampico and to fit any size of Roller Mill.

78E542	For 20" Rolls.....	\$0.55
	For 24" Rolls.....	.60
	For 30" Rolls.....	.75
	For 36" Rolls.....	.90
	For 42" Rolls.....	

"Brown-Duvel" Moisture Tester

Officially Recognized by All Grain Inspection Departments

The official "Brown-Duvel" Moisture Tester is used by all Grain Inspection Departments and is the machine by which your grain is always graded.

This is the most compact and adaptable machine offered. Made of strong non-rusting metal.

The machines for whole grains, cereals, etc., are equipped with and price includes: Full directions for operating, one gallon testing oil, one gallon alcohol, one Automatic Oil Measuring and Grain Separating device, and all necessary accessories except scale. Equipped for alcohol, gas or electric heat (110 or 220 volts). When kind of heat is not specified we always ship the machine with alcohol burners. The thermometers furnished are certified to be correct.

SIZES AND NET PRICES

Catalog Number	Number Com- part- ments	Width Inches	Height Inches	Length Inches	Net Price Gas or Alcohol Burners	Net Price Electric Heat
78E549	2	12 $\frac{1}{2}$	31	13	\$40.00	\$50.00
78E550	4	12 $\frac{1}{2}$	31	26	60.00	80.00
78E551	6	12 $\frac{1}{2}$	31	39	80.00	110.00

Two Compartment Tester

Extra equipment required for testing flour and ground grain Net \$15.00

SPECIAL TEST SCALE

A complete scale for weighing samples for moisture test and for determining test weights per bushel, dockage, weights for mailing samples, etc. Equipped with agate bearings and brass scoop. Gives the following weights: Number of grams for dockage percentage. Number of grams for moisture test. Number of ounces for mail matter. Test weight and dockage per bushel.

Quick breaking and guaranteed to be accurate. Does the work of four scales for the price of one.

78E552 Net price, each.....\$25.00



Finished
Brass

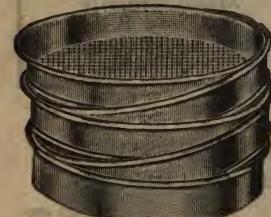
GRAIN TESTERS

Fill the cup with grain and the poise, when moved to balance, will show exactly the pounds a bushel will weigh.

To ascertain the percentage of waste, set the poise at 4 pounds and balance with grain. Then clean the grain and put the grain back into the cup and move poise to balance, and it will show on bottom row of figures the percentage of clean grain; or weigh the waste in the same manner and it will show the percentage of waste.

78E554 Net price, each, 1 quart capacity.....\$16.50

78E555 Net price, each, 2 quart capacity.....18.00



DOCKAGE SIEVES FOR WHEAT

As Per Government
Specifications

Will not rust. Made of aluminum. Each pan 13 inches in diameter, and telescopes each other.

78E556 Five Pans to a Set,
viz.: No. 1 Pan—Scalper Sieve,
with 12/64 perforations.

No. 2 Pan—Buckwheat Sieve, with 8/64 triangle perforations.
No. 3 Pan—Fine Seed Sieve, with 1/12 perforations.
No. 4 Pan—Chess Sieve, 4 $\frac{1}{2}$ /64x1 $\frac{1}{2}$ slotted perforations.

No. 5 Pan—The Solid Bottom Pan.
Net price, per set.....\$9.00
Net price, any pan.....2.25



OFFICIAL CORN SIEVES

Light weight; will not rust. Sieve telescopes into bottom pan. Made of one piece aluminum, 13 inches diameter. For the determination of the accurate percentage of dirt, foreign material and cracked corn, as specified in the GRAIN GRADES ACT.

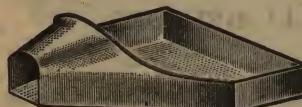
Used in connection with our Special "Test" Scale.

78E558 Price Net Per Set—
Sieve with 14/64 perforations and
bottom pan.....\$5.00
Sieve only.....3.00

WOOD SIEVE FRAMES



GRAIN SAMPLE PANS

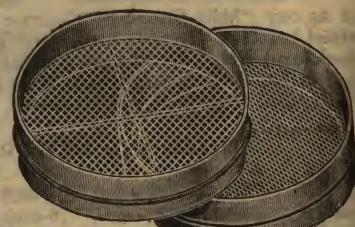


Made of Aluminum

Size 8 $\frac{1}{2}$ x12x1 $\frac{1}{2}$ inches. Capacity, 1 $\frac{1}{2}$ quarts of wheat.

78E560 Net price, each.....\$1.50

TESTING SIEVES



Heavy Tin Frames

May be clothed with wire cloth of different meshes or perforated metal.

The upper sieve fits into the lower one.

"Clothed" with "standard" meshes or perforations only.

78E564 Price, net, per set.....\$4.50

Can be fitted with any mesh wire cloth or size of hole in perforated zinc. State size desired and figure 4 sq. ft. of cloth or metal in addition to cost of frame. For prices on perforated metal and wire cloth, see index of this catalog.

Net Price of Wood Frame Only

78E562 18-inch diameter. Each, net.....\$0.75

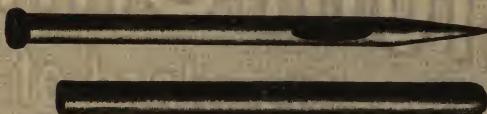
20-inch diameter. Each, net.....85

Extra when we fit metal or wire to sieve frames, ea. .50

TESTING GLASSES, TRIERS AND SIEVES

BAG SAMPLERS

For Sampling Seeds and Grain in Sacks



By means of its sharp and slender point the sampler can be thrust between the mesh of bagging, forcing it apart without tearing. They are used for sampling grain, seeds of all kinds, etc., in sacks.

78E584 For Small Seeds. Size 7/32 inch diam., 4 1/4 inch long. Net price, each.....\$1.00
78E586 For Grain. Size 5/8 inch diam., 6 inches long. Net price, each.....1.35
78E588 For Large Grains, Coffee, Rice, etc., 9 inches long. Net price, each.....2.50



FLOUR GLASSES

78E582 Polished Brass

No.	Height Inches	Diam. Inches	Lense Inches	Net Price Each
1	1 1/2	1 1/4	1	\$1.50



BOLTING CLOTH GLASS

Brass, with 1/4-inch Square Opening.
78E580 Net price, each.....\$0.50

GRAIN SAMPLES

Brass Tube and Brass Plunger

Made in three sizes, for cars or wagons. The grain sampler shown herewith consists of two polished brass tubes, one fitted inside, the other and having openings matching each other.

By turning the handle of the inner tube it revolves, thus opening and closing the holes. With the holes closed the sampler is thrust into the grain until it reaches the bottom of the wagon or car. The handle then being turned, the holes are opened and the sampler filled by grain taken from full depth of the load. The sampler is then turned on end and the sample secured.

This device effectually secures protection against frauds from the "doctored" grain.

78E590 Net Price

No.	Diam. Inches	Length Inches	Net Price
2	1 1/4	44	\$7.95
3	1 1/2	44	8.95
4	1 3/4	52	9.75

FLOUR TRIERS

Steel Triers



Spring Steel Highly Polished

Made of the finest quality Spring Steel, highly polished and tapered to a thin, flat edge. We recommend them to those desiring an extra quality trier.

78E592 Sizes and Net Prices
"Gumps Special," 2 1/8x6 inches. Each \$0.50
"Chicago Standard" 3 1/4x8 1/2 inch. Each...1.00

Ivory Triers



Made of first quality of genuine ivory. The best material of which a flour trier can be made. Does not stick, smooths perfectly and does not become rough.

78E593. Size, 1 1/8x5 1/8. Net price, each.....\$4.50

Stainless Steel Flour Tries

2 1/8x6, each.....\$0.75

Flour Tries made to order in all sizes and in quantities, with your special imprint on handles.

EXPERIMENTAL SIEVES

For Flour Middlings, Chops, Etc.

Nickel Plated.

Diameter of bottom, 6 in.; diameter of top, 7 3/4 in.; height, 2 1/8 in.



Every miller should have one of these sieves

The ring slips on or off to change the cloths as shown in cut.

78E593 Net Price, Experimental Sieves. Each \$1.65

We furnish cut pieces of genuine Dufour Bolting Cloth, 8 inches square to be used with the above frame.

Net Prices

No. 0000 to 4, inclusive.....	Each \$0.15
No. 5 to 10, inclusive.....	" .20
No. 11 to 14, inclusive.....	" .25
No. 15 to 17, inclusive.....	" .35
No. 18 to 25, inclusive.....	" .60
No. xx000 to xx7, inclusive.....	" .20
No. xx9 to xx10, inclusive.....	" .25
No. xx11 to xx14, inclusive.....	" .35
All Nos. of Grit Gauze.....	" .25

Compete Outfit

Including one piece each, Dufour Bolting Cloth, 8 inches square, Nos. 0000 to 17 inclusive, complete with sieve and ring.

78E596 Compete Outfit.

We can make up any kind of an outfit to suit you. Each \$5.85



"Emerson" Official Elevator Wheat Tester or Kicker

Determines The Exact Amount of Dockage in Each Sample.

THIS MACHINE ELIMINATES ALL GUESS WORK in determining the actual amount of dockage in each sample of wheat and saves all of the wheat and at the same time removes all of the small foul seeds and dirt.

It is used by the United States Department of Agriculture at Washington, D. C., in its Grain Standardization Department. Many of the Grain Inspection Departments of the various states as well as a great many large mills use this tester exclusively.

The sample after being run through the tester is divided into three parts. The wheat passes through the riddle, over the screen and is discharged into a box by itself. The oats and large foul seeds cannot pass through the riddle and are discharged over the riddle into a separate box. The dirt and small seeds drop through the lower screen into a drawer below.

Not a kernel of wheat is mixed with the oats. You have the wheat without a kernel of oats in it and the dirt and small seeds are in a separate compartment. By simply weighing the different separations the exact amount of each is determined; eliminating all possibility of guess work.

DIMENSIONS: Height 34"; Length 30"; Width over-all 18".

Shipping weight—85 pounds.



Dufour Silk

The Standard of

Ever Since
B. F. Gump Co. was
Founded we have sold "Dufour"
Silk Bolting Cloth Exclusively, Believing
It to Be Superior to Any Other Make. The
Satisfaction Obtained from its Use Confirms This Belief.

The History of the Development and Growth of "Dufour"

The Invention of the Hand Loom. The invention of a hand loom and the actual weaving of silk bolting cloth with a practically square mesh by Mr. Peter A. Dufour in the year 1830, marked an epoch in flour milling, the importance of which cannot be overestimated. Strange as it may seem, no important improvement has been made in this loom in the ninety years that have intervened. It is also strange that weaving silk bolting cloth has not prospered in any other part of the world, although repeated efforts have been made to accomplish it in various locations in Europe as well as in the United States, where looms and experienced weavers were imported for the purpose, but nothing but failure can be recorded.

Thal—The Home of Bolting Cloth. Prior to 1830 nearly all bolting cloth was woven in Holland, but was of inferior quality, with an irregular oblong mesh. Mr. Dufour established himself in 1833 in Thal, Canton of St. Gall, Switzerland, near the beautiful Lake of Constance, and here amid the hills and environs of Thal, in the cottages of the weavers all silk bolting cloth is woven, even that of other manufacturers who reside at Zurich and elsewhere.

The Weaving of Bolting Cloth Is A Fine Art. The Dufour people being on the ground have the distinct advantage of being in close touch with the weavers in their homes, and it not infrequently occurs that the son of a weaver becomes himself a weaver and devotes his entire lifetime to the service of Dufour & Co. in weaving just one number of cloth.

Where The Cloth Is Woven. The selection of sites for weavers' homes is made with the view of securing all the sunlight possible, as the weaving is done wholly by daylight. The loom is located in the basement of the home, where the warmth and moisture of Mother Earth contribute a large share in giving the atmosphere just the right temperature to impart to the silk threads the proper resilience and elasticity essential for perfect weaving.

If the word basement suggests a dark, noisome place from which nothing as delicate and beautiful as bolting cloth could be evolved, your mind will be instantly disillusionized by just one glance into the interior, for nothing more light and cheerful can be imagined. The floor is four or five feet below the ground level, and all above that level is windows allowing a flood of light to enter. The weaver sits or stands with his back to the light without obstructing it, thus allowing him the full benefit of every ray that enters.

"Dufour" Leads—Others Follow. Dufour & Co. have always taken the initiative in extending numbers of bolting cloths; thus originally there were but 10 (numbers 1 to 10), but as use and necessity arose other numbers were added, both coarser and finer — No. 0, No. 00, No. 000 and No. 0000 — and finer numbers until now No. 25 is woven with 200 meshes to the linear inch or 40,000 to the square inch. Then the extra and double extra numbers were added, all having the same number of meshes, all intended for ordinary flour mill use—the extras for use where a greater length of service was demanded. Then the triple extra was woven, intended especially for use on centrifugal reels. As still heavier cloths were demanded the Grit Gauze and triple extra Grit Gauze were produced in 1860 for special use in a large roller mill in Triest, Austria. The Grit Gauze cloths were first imported into the United States in 1872 for special use in powder mills. This array of facts makes it apparent why the Dufour cloth has always been in greater demand by millers than any other, and why more of it is imported and used than all other brands combined.

And Then Came "Tobler." It is a matter for congratulation and encouragement to inventors that Mr. Dufour reaped the reward for his invention, and also a matter for congratulation that he early associated with himself the "Toblers", whose able progressive management has kept the name and fame of Dufour and of the bolting cloth that bears that name ever in the Van.

The Wonderful Skill of The Weaver. We have said that the mesh in bolting cloth is practically square. Without doubt it is exactly square in the coarse numbers. It is always full count in the warp threads, (the threads that run parallel with the selvage) in all numbers, as these threads are fed by a steel comb, but the woof threads depend entirely upon the skill of the weaver and may not be exact as human accuracy has its limit. To test the matter, suppose you take No. 25—200 mesh to the inch—and try with a pen or pencil to make 200 marks in one inch of space, or try to prove by count with the aid of a magnifying glass that it is not full count, and you will be better able to appreciate the weaver's skill. In making the test remember that the warp threads are always full count.

The Threads Are Locked Together. Full twist cloths are those in which the warp thread is composed of two single threads between which the woof thread is passed, the warp thread twisted around the woof thread, thus locking the mesh so that it will always remain square. That cannot be done in numbers finer than 12 in every thread, but it is done in every alternate thread.

The Worm That Spins The Silk. Much that is exceedingly interesting could be written about the silk worm, the eggs that are hatched by incubation, the mulberry tree upon which they are nourished, the cocoon that they spin, the selection of the best white cocoons that are raised and the multitudinous processes through which they pass until the thread is perfected and ready for the weaver's hands, but it is sufficient to say that this has been the study of Dufour & Co. for almost a century until perfection has been attained.

A Comparison of The Weights. In the daily practical use of bolting cloth in flour milling, there is a diversity of opinion among millers as to which is most desirable, but it may be said that it is good practice to use the standard grade for all soft stocks, as the thinner the silk the more freely it will bolt, and the less danger of clogging. In case standard silk is being used, and it is thought not to be sufficiently durable, resort may be made to the extra, or double extra of the same number, but it must be borne in mind that a greater bolting surface will be required to give the same capacity for the reason that while the mesh is of the same number, the thread is heavier and consequently, the mesh is imperceptibly smaller.

Heavier Silk Requires A Greater Bolting Surface. More frequently, in changing from the standard grade it is advisable to use a double extra heavy, one number coarser, the mesh being approximately of the same size, but here we get a lessened capacity by reason of a less number of meshes and the increased friction occasioned by the coarser thread and greater tendency to clog. The difference in the number of meshes is not generally appreciated; if, for instance, you are using No. 12 standard and change to No. XXII, the No. 12 has 15,625 meshes to the square inch and if it takes 10 yards to cover the reel, there will be 225,000,000 meshes, while in the No. 11 there will be but 193,766,400 meshes or a less number by 31,233,600. Equivalent to 1-7/10 yards of No. XXII silk. No further argument is needed to show the lessened capacity and consequent necessity for greater bolting surface. For purifiers we have a decided preference for the standard grade. It is smoother, the stock will pass over it more rapidly—having a greater capacity—it is thinner, consequently the air will pass through it with greater force and in greater volume.

Why We Stick to "Dufour" The Dufour cloth was originally selected as the best and most desirable to handle by the Dayton house of "Gump" before the Chicago branch was established. The reason of the selection was because then as now, it was in greater demand than any other, and then, as now, more of it was imported and sold than of all other brands combined, so that it has been sold and extolled as the best by "Gump" for approximately 70 years.

Bolting Cloth

Bolting Cloth Perfection



**NET PRICES Per Foot
for Making Silk Cloths to Order.**

Sieve Bolters. Per Lineal Foot. \$0.25

Purifiers " " " .45

Round Reels " " " .45

Hexagon Reels " " " .60

Octagon Reels " " " .75

Note—

Charge is

Per Lineal Foot

Lengthwise of Sieve or Reel

Locust Beans For Sifter Cloth Cleaning. Per lb. net \$0.85

78H700

NET PRICES "DUFOUR" SILK PER YARD, 40 INCHES WIDE.

Number	Number of Meshes to Lineal Inches of Standard X and XX Silk	Standard	Extra Heavy X	Double Extra Heavy XX	Triple Extra Heavy XXX	Number	Number of Meshes to Lineal Inches of Standard X and XX Silk	Standard	Extra Heavy X	Double Extra Heavy XX	Triple Extra Heavy XXX
0000	18	\$2.45		\$2.95		10	109	\$4.60	\$4.90	\$5.15	\$5.35
000	23	2.55		3.00		11	116	4.85	5.20	5.40	5.65
00	29	2.60		3.20		12	125	5.20	5.50	5.90	6.10
0	38	2.65		3.20		13	129	5.40	5.80	6.30	6.50
1	48	2.75		3.30		14	139	5.70	6.10	6.70	6.90
2	54	2.85		3.45		15	150	6.10	6.75	7.15	7.50
3	58	3.00		3.60		16	157	6.75	7.30	8.00	8.50
4	62	3.10		3.80		17	163	7.50	8.00	8.50	9.50
5	66	3.20		3.95		18	166	9.00			11.40
6	74	3.40	\$3.75	4.10	4.35	19	169	10.15			
7	82	3.55	3.90	4.30	4.55	20	173	11.20			
8	86	3.90	4.25	4.55	4.80	21	178	12.00			
9	97	4.20	4.60	4.85	5.05	25	200	14.00			

The comparative difference in the various grades of Bolting Cloth is as follows: Extra Heavy Silk, or X, is one grade heavier than Standard Silk; Double Extra Heavy Silk, or XX, is one grade heavier than X; Triple Extra Heavy Silk, or XXX, is one grade heavier than XX.

NET PRICES "DUFOUR" GRIT GAUZE AND XXX GAUZE.

Grit Gauze and Triple Extra Grit Gauze are made in all even numbers from 14 to 72 meshes to lineal inch, 30 numbers in all. 40 inches wide.

Grit Gauze is one grade heavier than XXX Silk, and XXX Grit Gauze is about three grades heavier than Grit Gauze.

78H702 Grit Gauze, all numbers, per yard \$4.65

78H704 XXXGrit Gauze, all numbers, per yard \$5.75

Comparison of Sizes of Standard Bolting Silk with Grit Gauze and Wire Cloth

The table shows the relative size of mesh of Grit Gauze compared with Standard Silk to the left, and with XXX Grit-Gauze and Wire Cloth to the right.

The bold-faced figures in Grit-Gauze and XXX Grit-Gauze are exact equivalents of Standard Silk.

Numbers of Standard Silk	Numbers of Grit-Gauze	Meshes to Lineal Inch of Grit-Gauze	Numbers of XXX Grit-Gauze	Meshes to Lineal Inch of XXX Grit-Gauze	Meshes to Lineal Inch of Wire Cloth	Numbers of Standard Silk	Numbers of Grit-Gauze	Meshes to Lineal Inch of Grit-Gauze	Numbers of XXX Grit-Gauze	Meshes to Lineal Inch of XXX Grit-Gauze	Meshes to Lineal Inch of Wire Cloth
0000	16	15½	14	13½	16	1	44	42½	40	39	36
000	18	17½	16	15½		46	44½	42	40½	42½	
	20	19	18	17½	22	48	46½	44	44½	46½	
	22	21	20	19		2	50	48½	46	44½	50
	24	23	22	21		52	50½	48	46½	48½	
	26	25	24	23	28	3	54	52½	50	48½	54
	28	27	26	25		56	54½	52	50½	52	
	30	29	28	27		58	56½	54	54½	52½	60
	34	33	30	29	30	4	60	58	56	54½	
	36	35	32	31		5	62	60	58	56½	64
	38	37	34	33		6	64	62	60	58	
	40	39	36	35		6	66	64	62	60	70
	42	40½	38	37		7	68	66	64	62	80
						72	72	68	66	64	90

MAGENTA COLORED BOLTING CLOTH WEBBING

For Use In Making Up Bolting Cloths, for Reels, Purifiers, Sifters, etc. Bolts contain 150 yards.

Width Inches	Net Price										
	Per Yard	Per Bolt									
1½	\$0.03	\$3.00	1½	\$0.05½	\$5.50	2¾	\$0.08	\$8.00	4½	\$0.12½	\$12.50
2½	.03½	3.50	1¾	.06	6.00	3	.08½	8.50	4¼	.13	13.00
3½	.04	4.00	2	.06½	6.50	3½	.10	10.00	5	.13½	13.50
4	.04½	4.50	2½	.07	7.00	3½	.10½	10.50	5½	.15	15.00
4½	.05	5.00	2½	.07½	7.50	4	.11	11.00	6	.16½	16.50

“TYLER” LIGHT TINNED BOLTING CLOTH

LONG LIFE
AND
FREE BOLTING



No. 64 “Tyler” Light Tinned Wire Cloth

“TYLER” LIGHT TINNED BOLTING CLOTH

Tyler Light Tinned Bolting Cloth is made from a fine special wire that is tough and will not corrode.

It is recommended for plan sifters, bolters, and sieve machines in flour mills.

A very large economy in the use of Tyler Light Tinned wire cloth for scalping is its long life.

We will submit light tinned samples of any mesh or furnish information about its use, but a trial order will be self-convincing as to efficiency and economy.

**ALL WIDTHS FURNISHED
FROM 20 TO 40 INCHES.**

**Note.—NOT RECOMMENDED
FOR USE ON REELS.**

Sifter Cloths made up with Webbing and Light Tinned Wire Cloth at 25c lineal foot, measured around the outside edges. For example—A Sifter Cloth 24x24 inches would be charged for making 8 ft. or the distance around the 4 sides, 25c per foot or \$2.00.

**We Can Make Complete Wire
Cloths for Any Make of
Bolting Machine**

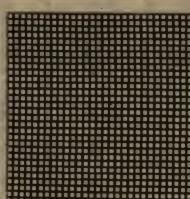
We carry in stock all the standard numbers of “Tyler” wire cloth for bolting purposes, and can ship in very short time finished cloths ready to attach to any make of Bolting Machine.

You will get the best satisfaction in the quality and service of Gump made reel covers and Bolter cloths.

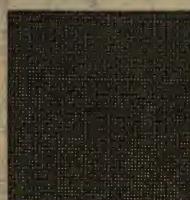
**REMEMBER THAT WE CAN
FURNISH WIRE CLOTH OF ANY
SIZE AND DESCRIPTION THAT
IS MADE. WRITE FOR PRICES.**

Stock Sizes and Net Prices

78K712		Prices for “Tyler” Light Tinned Wire Cloth							
No. Meshes to Lineal Inch	Net Price Per Sq.Ft	Equal to Grit Gauze No.		Equal to Silk Bolt- ing Cloth No.	No. Meshes to Lineal Inch	Net Price Per Sq. Ft	Equal to Grit Gauze No.		Equal to Silk Bolt- ing Cloth No.
		Stand	XXX				Stand	XXX	
16	\$0.25	14	...	0000	56	\$0.75	52	48	...
18	.25	16	14	0000	58	.80	...	...	...
20	.30	18	16	...	60	.80	54	50	3
22	.30	20	18	000	62	.85	56	52	...
24	.35	22	20	...	64	.85	58	54	4
26	.35	24	22	...	66	.90	60	56	...
28	.35	26	24	00	68	.90	62	58	5
30	.40	28	26	...	70	.90	64	60	...
32	.40	30	28	...	72	1.00	...	...	...
34	.45	32	...	...	74	1.00	66	62	6
36	.45	34	30	0	76	1.00	68	64	...
38	.50	36	32	...	78	1.10	70	66	7
40	.50	38	34	...	80	1.10	72	70	8
42	.55	...	...	...	82	1.25	...	...	...
44	.55	40	36	...	84	1.25	...	...	...
46	.65	42	38	...	86	1.25	...	...	...
48	.65	44	40	1	88	1.50	...	...	...
50	.70	46	42	...	90	1.50	...	...	...
52	.70	48	44	...	92	1.75	...	...	...
54	.75	50	46	2	94	1.75	...	...	9



30x30 Mesh. .014
Bran Duster



60x60 Mesh. .0075
Bran Duster

BRAN DUSTER WIRE CLOTH

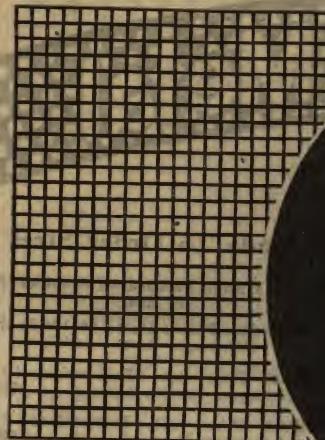
Bran Duster Wire Cloth is made of heavier wire than regular milling cloth. It is coated with black varnish which prevents rust and facilitates the bolting.

Stock Width—18 inches.

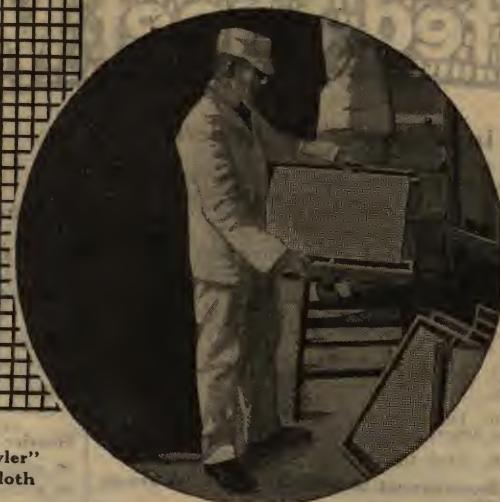
Stock Sizes Listed at Net Prices, per square foot.

78K714

Number Meshes Per Lineal Inch	Net Price Per Square Foot	Diam. of Wire in Decimal of an Inch	Size of Opening in Decimal of an Inch
30	\$0.38	.014	.0193
35	.41	.013	.0156
40	.45	.011	.0140
45	.59	.010	.0122
50	.63	.0095	.0105
55	.77	.009	.0092
60	.81	.0075	.0092
64	.86	.007	.0086
70	.90	.00675	.0075
74	.99	.0065	.0070
80	1.17	.00525	.0073
90	1.35	.005	.0061



12x12 Mesh .018 "Tyler"
Tinned Mill Screen Cloth



"TYLER" TINNED MILL SCREEN CLOTH

UNIFORM
AND
ACCURATE

The Most Durable and Satisfactory Wire Cloth on the Market. "Tyler" Tinned Mill Screen Cloth. This list applies to what is termed "Plated Mill Screen Cloth," in which steel wire is used, tin-coated, which prevents rust and affords a polished surface, which is less liable to clog than ordinary wire cloth. Its use is recommended for bolting purposes, and is carried in stock 24 and 32 inches wide.

78K710

Prices for "Tyler" Tinned Mill Screen Cloth

Number Meshes per Lineal Inch	Net Price per Square Foot	Diameter of Wire Decimal of an Inch	Gauge of Wire Washburn and Moon Gauge	Size of Opening Decimal of an Inch	Number Meshes per lineal Inch	Net Price per Square Foot	Diameter of Wire Decimal of an Inch	Gauge of Wire Washburn and Moon Gauge	Size of Opening Decimal of an Inch
2	\$0.13	.054	17	.446	20	\$0.21	.014	30	.0360
	.14	.041	19	.292	22	.24	.0135	31	.0320
	.14	.035	20	.215	24	.26	.013	32	.0287
5	.14	.032	21	.168	26	.27	.011	33	.0275
6	.15	.028	22	.139	28	.29	.010	34	.0257
7	.17	.028	22	.115	30	.30	.0095	35	.0238
8	.17	.025	23	.100	32	.32	.009	36	.0223
9	.17	.023	24	.088	34	.34	.009	36	.0204
10	.17	.020	25	.080	36	.36	.009	36	.0188
12	.17	.018	26	.065	40	.43	.0085	37	.0165
14	.17	.017	27	.054	45	.51	.008	38	.0142
16	.19	.016	28	.0465	50	.55	.0075	39	.0125
18	.19	.015	29	.0406	60	.72	.0065	41	.0102

We make up complete with webbing ready to attach at the following prices:

For Round Reels, per lineal foot per length.....\$1.25
When Hooks and Eyes or Eyes are furnished, there will be an additional charge of 50c per lineal foot on the part of webbing attached.

For Hexagon Reels, per lineal foot per length.....\$2.00
When Reel Clothes are furnished without webbing, the charge for joining will be—1 seam, \$1.75; 2 seams, \$2.50; 3 seams, \$3.25

PRICES FOR "TYLER" BRASS WIRE CLOTH

Stock sizes of brass wire cloth 36 inches wide.
In addition to the sizes listed we can supply brass wire cloth in all meshes up to 250 mesh, in 24, 30 and 36-inch widths. Write for prices.

78K716

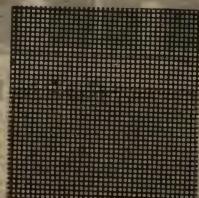
Stock Sizes Listed at Net Prices Per Foot.

Meshes per Lineal Inch	Net Price per Square Foot	Diam. of Wire Decimal Inches	Size Opening Decimal Inches	Meshes per Lineal Inch	Net Price per Square Foot	Diam. of Wire Decimal Inches	Size Opening Decimal Inches
10	\$0.65	.025	.075	90	\$1.50	.00525	.0059
12	.60	.023	.060	100	1.75	.0045	.0055
14	.65	.020	.051	110	1.85	.004	.0051
16	.60	.018	.0445	120	2.00	.0087	.0046
18	.60	.017	.0386	130	2.25	.0034	.0043
20	.55	.016	.0340	140	2.50	.0029	.0042
22	.55	.015	.0305	150	2.75	.0026	.0041
24	.60	.015	.0267	160	3.00	.0025	.0038
30	.70	.0135	.0198	170	3.50	.0024	.0035
35	.70	.011	.0176	180	4.00	.0023	.0033
40	.65	.010	.0150	190	4.25	.0022	.0031
45	.85	.0095	.0127	200	4.50	.0021	.0029
50	.80	.009	.0110	220	5.00	.0017	.0028
60	.85	.008	.0087	240	6.00	.0016	.0026
70	1.00	.007	.0073	250	6.50	.0016	.0024
80	1.25	.00575	.0068				

20x20 Mesh
.016 Brass.

10x10 Mesh
.025 Brass.

90x90 Mesh
.005 Brass



40x40 Mesh
.009 Brass.

Perforated Sheet Metal

PERFORATED ZINC

Carried in Stock for Immediate Shipment

Stock Sizes Illustrated

No Margins

No. 10—Zinc in sheets 36x84 inches.
No. 78K734—Price net per lineal foot, 36 inch width (3 sq. ft.) \$1.00

Pieces cut to size, charges are based on 36 inch width. Minimum charge is \$1.00.

For example—A piece 29x24 inches is charged as a piece 36x24 inches, or 6 sq. feet. \$2.40.

No. 78K736—Price net per sheet 36x84 inches—one size of hole only to each sheet..... \$5.50

Instructions For Ordering

1. Make a small diagram of each different size sheet of perforated metal you want. Where a sieve is composed of more than one sheet, make a diagram of each separate piece.

2. Mark on each diagram the length and width in inches, the width of the margins and the exact size of the holes.

3. If the hole is to be oval or oblong, show which way of the sheet you wish the perforations to run.

4. Give the number of pieces you wish of each size.

5. Draw an arrow on each diagram indicating the direction grain passes over sieve.

6. State the kind of metal wanted.

Sieves cannot be returned unless we are at fault.

When ordering from Stock sizes, no margins are recognized, but be sure to state size of hole wanted and if oblong or oval to state which way of the sheet you wish the perforations to run.

Do not fail to give full information.

Made To Order Sizes

No. 26 Gauge Perforated Steel or No. 10 Zinc

In Any Size Pieces Up to 44x126 Inches (Minimum charge \$4.00)

78K738—Price, net. Perforations 10/64 and larger. Per sq. ft. \$0.85

78K740—Price, net. Perforations 9/64 and smaller. Per sq. ft. \$0.90

Heavier Gauge Steel Than Standard
24 gauge, per square ft. \$0.95
22 gauge, per square ft. \$1.00

We can furnish Wood Frames for Perforated Metal or Wire Cloth, or Patent Corn Sieves, to be used on Separators, Corn Cleaners, etc.

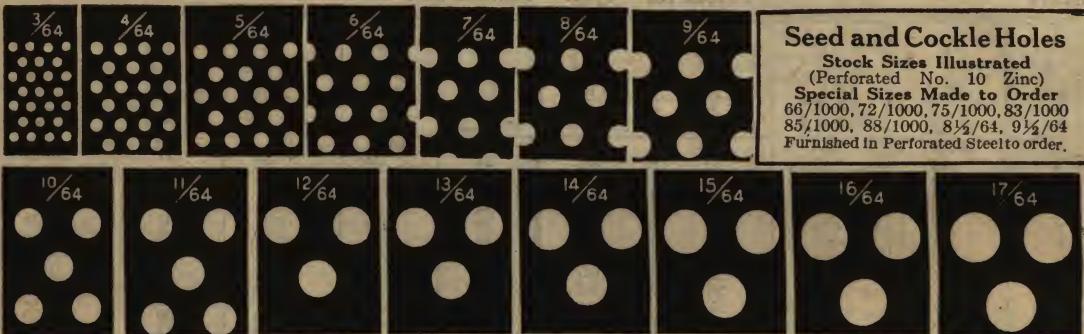
78K744—Price net, per square foot. \$0.85

Seed and Cockle Holes

Stock Sizes Illustrated

(Perforated No. 10 Zinc)

Special Sizes Made to Order
66/1000, 72/1000, 75/1000, 83/1000
85/1000, 88/1000, 8½/64, 9½/64
Furnished in Perforated Steel to order.



Barley Holes

Use Round Holes

9/32", 1/8" or 3/8" are good sizes.

Buckwheat Holes

Use Triangle Holes—All Sizes
Made Special to Order

7/64, 8/64, 9/64 and 9½/64

FLAX AND RICE HOLES

Made up to order



Wheat Holes

Eleven sizes of perforated No. 10 Zinc illustrated

Also 1/4, 1/2 and 5/8 sizes furnished from stock.

Special sizes made to order

10½/64, 19/64 and 21/64

Perforated Steel of all Sizes

Made to Order

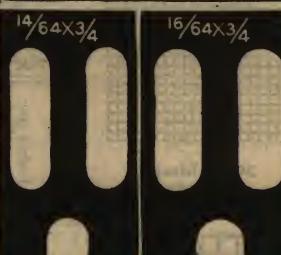


OAT HOLES

Five Sizes Illustrated in Stock in No. 10 Perforated Zinc

Special Sizes Made to Order
9/64x3/4, 9/64x3/4, 10/64x3/4, 10/64x3/4,
10/64x5/8, 11/64x3/4, 12/64x3/4, 12/64x3/4,
12/64x5/8, 14/64x3/4, 16/64x3/4, 16/64x5/8,
16/64x1, 17/64x3/4, 18/64x3/4, 19/64x3/4,
20/64x3/4, 21/64x3/4, 23/64x1, 23/64x1½

Perforated Steel Made to Order—All Sizes

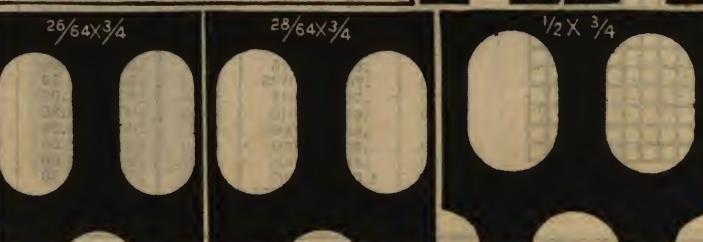


CORN HOLES

Three Sizes Illustrated in Stock—Also Round Holes
5/8, 11/16, 3/4, 7/8 and 1 inch
In No. 10 Perforated Zinc

Special Sizes Made to Order
24/64x5/8, 24/64x3/4, 30/64x27/32,
32/64x11/16, 32/64x1½, 36/64x7/8,
40/64x3/4, 44/64x1

All Sizes Perf. Steel Made to Order



EQUIPMENT FOR MILL ROLLS ROLLER MILL GEARING

PINION—Made of Bakelite Micarta Material.

Not affected by water or oil.

Not affected by most acid or alkali solutions.

Does not deteriorate.

Not attacked by rodents.

Has greater life than any other non-metallic material and when properly applied and lubricated will often outlast cast iron or brass.

Machined cut to proper size.

GEAR—Made of Cast Iron—Machine Cut.

Gear and Pinions Key-Seated for Drive Key.

When end plates are required on pinions add 10% to the Net Prices of pinions.

BAKELITE MICARTA is a non-metallic material for gear and pinion applications. It is a product of a special heavy duck of uniform weave, thickness and tensile strength, bonded together with Bakelite by heating while under an enormous pressure.

LUBRICATION.

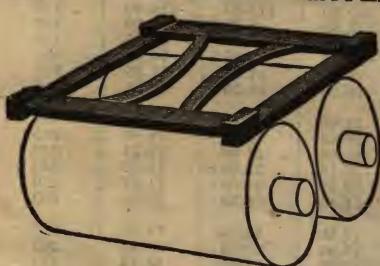
It is essential that Bakelite Micarta gears be well lubricated. The life of a well-lubricated gear is from two to five times as great as the life of non-lubricated gear in similar service. This is especially noticeable where the duty is heavy. A heavy graphite grease is recommended.

DIFFERENTIAL ROLL SPEEDS.

Diameter of Rolls	Speed Fast Roll R. P. M.	SPEED OF SLOW ROLL R. P. M.				
		1½ to 1	1¾ to 1	2 to 1	2¼ to 1	2½ to 1
8"	600	400	343	300	267	240
7"	550	367	315	275	245	220
9"	500	334	285	250	222	183
10"	450	300	257	225	200	167
6"	650	433	372	325	290	180
7"	600	400	343	300	267	217
9"	525	350	300	263	234	210
10"	500	334	285	250	222	175

Gear and Pinion to Fit Standard Sizes of Roll Journals.

TRAM PLATES



Net Prices

78E600—Tram Plates for 6 or 7 inch Rolls.. Each \$2.95
78E602—Tram Plates for 9 or 10 inch Rolls.. Each 3.75

ROLL BRUSH CLIPS

For Holding Roll Brushes

Fitted with thumb screw and lock-nut to take up the roll brush when it becomes worn from use.

78E604—Price each, net.....\$0.75
78E606—Price, per pair, net.... 1.25



"IDEAL" ROLL TRUCKS

The best truck ever devised for moving mill rolls. With this truck one man can move heavy rolls as easily as though they were sacks of flour. The roll is lifted from the floor and it does not come in contact with nails, screws, etc., which damage the rolls, as is the case when rolls are dragged or rolled across the floor. All that is necessary is to run the truck over the roll, bear down and wheel the roll away. Made entirely of iron and steel. Will save its cost many times in the time and labor saved.



78E608—Ideal Roll Truck.



78E610

SIZES AND NET PRICES

Diameter Rolls	Differential		Face	Teeth	Price, Each Net
6 inch	2½ to 1	Gear....	1¾	52	\$5.55
		Pinion ..	1¾	20	7.69
6 inch	2 to 1	Gear....	1¾	48	5.50
		Pinion ..	1¾	24	8.81
6 inch	1½ to 1	Gear....	1¾	43	4.95
		Pinion ..	1¾	29	11.40
7 inch	2½ to 1	Gear....	2	50	7.90
		Pinion ..	2	20	9.52
7 inch	2 to 1	Gear....	2	46	7.25
		Pinion ..	2	24	12.28
7 inch	1½ to 1	Gear....	2	42	7.29
		Pinion ..	2	28	16.64
9 inch	2½ to 1	Gear....	2½	64	13.15
		Pinion ..	2½	26	14.00
9 inch	2 to 1	Gear....	2½	60	13.00
		Pinion ..	2½	30	19.10
9 inch	1½ to 1	Gear....	2½	54	12.60
		Pinion ..	2½	36	24.47

ROLL BRUSH FRAMES AND SCRAPERS Complete With Brushes

Made with Tampico Fibre Brushes, the ends of which are tightly pressed together and held in place by adjustable pieces of sheet steel.

The brush held in this manner makes a fibrous scraper that remains cool when in contact with the running roll.

A slight pressure against the roll will remove all flakes and ring-arounds of material passing through the rolls.

The brushes for each pair of rolls are attached to an equalizing frame, which holds the brushes against the rolls by means of adjusting screws, fitted with springs and lock nuts, therefore making the pressure on the rolls the same all over.



NET PRICES

For One Pair of Rolls Complete

78E612	
6x12 Rolls, per Set.....	\$4.50
6x15 Rolls, per Set.....	5.25
6x20 Rolls, per Set.....	5.50
7x14 Rolls, per Set.....	5.00
7x16 Rolls, per Set.....	5.25
7x20 Rolls, per Set.....	6.00
7x24 Rolls, per Set.....	\$6.25
9x14 Rolls, per Set.....	5.00
9x18 Rolls, per Set.....	5.75
9x24 Rolls, per Set.....	6.25
9x30 Rolls, per Set.....	7.50
9x36 Rolls, per Set.....	9.00

ROLL BRUSHES WITH STEEL SUPPORTS

NET PRICES, PER PAIR

Without Frame or Adjustments

78E614	
For Rolls 12 inches long.....	Per Pair \$1.80
For Rolls 14 inches long.....	Per Pair 2.15
For Rolls 15 inches long.....	Per Pair 2.25
For Rolls 16 inches long.....	Per Pair 2.35
For Rolls 18 inches long.....	Per Pair 2.65
For Rolls 20 inches long.....	Per Pair 2.95
For Rolls 24 inches long.....	Per Pair 3.60
For Rolls 30 inches long.....	Per Pair 4.50

INFORMATION AND NET PRICES FOR CORRUGATING MILL ROLLS



MODERN
MACHINES AND
TOOLS WITH UP-TO-DATE
WORKMANSHIP INSURE UNBROKEN
AND ACCURATE CORRUGATIONS

Expert Operators And Modern Machines Insure Perfect Corrugating

Our Corrugators are heavy automatic machines, insuring true, uniform and smooth corrugations, having an automatic feed, the corrugations are all regular and accurate. We can cut the rolls with any style of special corrugation for which a miller may express a preference. We show below magnified sectional views of the four styles most commonly used, time-tried and never found wanting. Our corrugating tools are made from hobs that are always alike, so when returning rolls to be corrugated, which have been cut previously with our tools, the exact shape is duplicated and it is only necessary to grind the top of the teeth to a uniform surface and retrace the cuts. The advantage to the miller is, that the reduction in diameter of the rolls is so little that it prolongs their life from 60 to 75%.



Saw Tooth Cut



Gump's No. 19
Special



"V" Cut with Sharp
Top and Bottom



"V" Cut with Round
Top and Bottom

"Le Page" Patent
Cut For Slow Roll

This cut is used principally on corn and run sharp to sharp, giving a large grinding capacity with the least amount of power. It is used for grinding all grains where a strong cutting action and quick reduction of the material is desired. Combined with a large differential and spiral this cut is unexcelled for reducing stock to a fine product.

This corrugation is recommended on break rolls on wheat for the following reasons: The dull top allows close grinding without cutting the bran unnecessarily. The peculiar shape of the teeth, together with the round bottom allows the middlings made to discharge freely from the corrugations without being mutilated, therefore producing the largest amount of unbroken middlings possible.

This Corrugation is very strong and is used by many millers for various purposes. It can be run in either direction with equal results. The grinding action is less than a saw tooth cut running sharp and more than a saw tooth running dull.

This corrugation is used for grinding many cereals. It can be run in either direction with good results and is a corrugation that will last a long time without having to be re-corrugated.

This cut was originated and developed in our roll corrugating department and all patents are controlled by us. For description of this celebrated cut see Page 34 of this catalog.

THIS IS SLOW ROLL
Opposite cut is fast roll
Printers mistake

"Le Page" Patent
Cut for Fast Roll

Net Prices For Corrugating Mill Rolls

Size of Rolls, Inches	10 Corrugations per Inch and Finer		8 Corrugations per Inch and Coarser		Shipping Weight of Each Roll, Boxed, Pounds
	Corrugated Rolls Ground and Corrugated, Per Pair	Smooth Rolls Ground and Corrugated, Per Pair	Corrugated Rolls Ground and Corrugated, Per Pair	Smooth Rolls Ground and Corrugated, Per Pair	
6 x 10	\$12.50	\$10.00	\$13.50	\$10.80	120
6 x 12	15.00	12.50	16.20	13.50	130
6 x 15	17.50	15.00	18.90	16.20	155
6 x 16	18.75	15.63	20.25	16.88	165
6 x 18	20.00	16.25	21.60	17.55	175
6 x 20	22.50	18.75	24.30	20.25	200
7 x 14	18.75	15.63	20.20	16.88	190
7 x 15	18.75	15.63	20.20	16.88	205
7 x 16	20.00	16.88	21.60	18.23	220
7 x 18	21.25	18.13	22.95	19.58	240
7 x 20	22.81	19.69	24.63	21.27	260
7 x 24	24.38	21.25	26.33	22.95	200
9 x 8	15.00	12.50	16.20	13.50	215
9 x 11	19.38	15.94	20.93	17.22	263
9 x 14	20.00	16.88	21.60	18.23	310
9 x 15	21.25	18.13	22.95	19.58	330
9 x 18	25.00	21.25	27.00	22.95	385
9 x 24	31.25	26.25	33.75	28.35	490
9 x 30	37.50	31.25	40.50	33.75	600
9 x 36	43.75	36.25	47.25	39.15	700
10 x 10	25.00	22.50	27.00	24.30	275
10 x 30	41.25	34.38	44.55	37.13	785
10 x 36	50.63	41.88	54.68	45.23	935
10 x 42	61.88	51.25	66.83	55.35	1090
12 x 20	50.00	40.00	54.00	43.20	840
12 x 24	55.00	45.00	59.40	48.60	970
12 x 30	62.50	52.50	67.50	56.70	1150
12 x 36	70.00	60.00	75.60	64.80	1330
14 x 12	32.50	25.00	35.10	27.00	590
14 x 16	43.75	33.75	47.25	36.45	820
14 x 20	55.00	42.50	59.40	45.90	985

Price for one roll, one-half the price, per pair.

Willford Mill Rolls---Per Set of Three
No. 2 \$25.00 No. 1 \$31.25 No. 0 \$50.00
For truing up roll journals an extra charge is made.

Prices for grinding and corrugating rolls of other sizes and special corrugations will be quoted on application.

Prices for corrugating smooth rolls that do not need regrinding will be charged as **Corrugated Rolls ground smooth**.

When rolls are sent us without boxes, and it is necessary that we make boxes to protect the rolls in handling, these boxes will be charged for, at cost.

Chilled Iron Mill Rolls (Prices on Application)

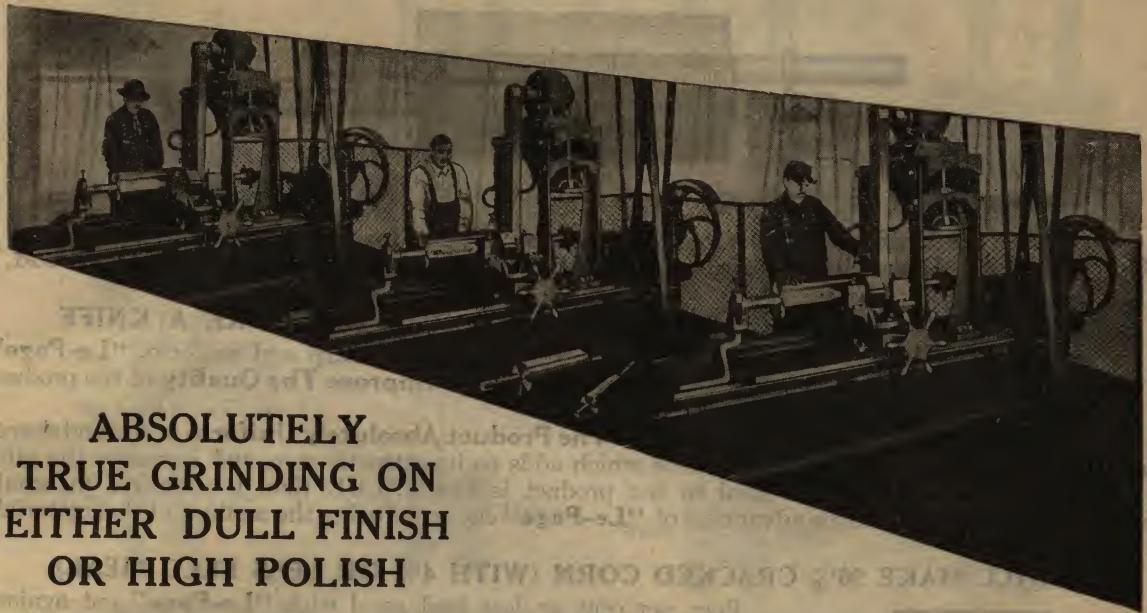
State diameter of roll, length of roll, size of journals, kind, make, and name of mill and all information.

We always have on hand a large assortment of used rolls, which we equip to fit any standard mill at very low prices.

See opposite paragraph for shipping instructions.

INFORMATION AND NET PRICES FOR

GRINDING MILL ROLLS



**ABSOLUTELY
TRUE GRINDING ON
EITHER DULL FINISH
OR HIGH POLISH**

Net Prices For Grinding Mill Rolls.

Size Inches	Regrinding Smooth Rolls Per Pair	Corrugated Rolls Ground Smooth Per Pair	Weight of Each Roll Boxed, Lbs.
6 x 10	\$ 6.25	\$ 8.75	120
6 x 12	7.50	10.00	130
6 x 15	9.38	11.88	155
6 x 16	10.00	13.13	165
6 x 18	11.25	15.00	175
6 x 20	12.50	16.25	200
7 x 14	10.00	13.13	190
7 x 15	10.00	13.13	205
7 x 16	10.63	13.75	220
7 x 18	11.25	14.38	240
7 x 20	12.19	15.63	260
7 x 24	13.13	16.88	300
9 x 8	7.50	10.00	215
9 x 11	10.63	14.06	263
9 x 14	11.25	14.38	310
9 x 15	11.88	15.00	330
9 x 18	12.50	16.25	385
9 x 24	15.00	20.00	490
9 x 30	18.75	25.00	600
9 x 36	22.50	30.00	700
10 x 10	12.50	20.00	275
10 x 30	20.63	27.50	785
10 x 36	25.63	34.38	935
10 x 42	31.88	42.50	1090
12 x 20	25.00	31.25	840
12 x 24	30.00	37.50	970
12 x 30	37.50	45.00	1150
12 x 36	45.00	52.50	1330
14 x 12	16.25	22.50	590
14 x 16	21.25	33.75	820
14 x 20	27.50	40.00	985

Directions for Shipping Rolls To Be Corrugated

When rolls are shipped to us for corrugating, write us at once, giving us a diagram and all information as to how they are to be corrugated so there need be no delay.

Take a shipping tag, tie it to the shaft of the fast roll on the drive end and mark it with ink as follows:

Fast Roll No. 1. Tag the roll that runs with it on its drive end as follows:

Slow Roll No. 1. Number your rolls by pairs, from 1 up to as many pairs as you ship. The numbers denote the pairs to which the rolls belong.

Tags must be securely tied on and rolls carefully boxed. Mark on each box plainly, not only our address, but your own name and address as well. In shipping rolls to be ground only, the figure number is not necessary.

Service and Satisfaction in
Roll Grinding and Corrugating

Ever since rolls came into common use the word "GUMP" has been associated with high grade roll grinding and corrugating. Due to this fact, a great many mills have discontinued sending their rolls to nearby shops because of imperfect work, to enjoy the better results secured from us. This great volume of work requires us to maintain the finest automatic tools that money can buy and put them in charge of skilled mechanics who have demonstrated their fitness to give customers the best quality of work. If you have never sent your rolls to us, make up your mind now to disregard the matter of distance and freight—others have done so and ever after remained steady customers.

Chicago being one of the largest railroad centers with roads reaching in all directions, the most favorable transportation services are obtained, and this, combined with our splendid facilities assures promptness.

Roll Grinding

We use FARREL Roll Grinders which are considered the best, and being operated by skilled mechanics, trained in this work, assures accurate work. When you do not wish to break in highly polished smooth rolls for reducing middlings, state in your order that you want our "dull polish". Long rolls running in babbitted bearings, because of occasional warm journals, expand at the ends more than in the center, thus hindering a miller from obtaining uniform grinding the entire length of the roll. With the aid of expansion tables and micrometer gauges we can, when so requested, grind the rolls to allow for this expansion.

Preparing Rolls For Grinding or
Corrugating

Rolls to be reground or corrugated should have the journals round and true with the rolls. For this reason we test all rolls in a lathe before proceeding with the work. When they are round and true, but slightly rough, or have small ridges cut in them so that they can be finished with a file or emery cloth, we make no charge. But, where they are worn out of round, or have deep ridges cut in them so that a cut must be taken off the journals in a lathe, to true them up, we make a charge for this work.

It is necessary to have roll journals round and true before grinding, as rolls are ground with the journals revolving in bearings, and unless the journals are true with the rolls, surface scratches will be obtained.

Genuine "LePage" Patent Corrugation For Mill Rolls



Patented May 16th 1916

Gives Perfect Uniformity to Cracked Corn or Wheat for Poultry or Stock Feeds, Hominy Grits, Granulated Hominy, and All Cereals for Granulated Breakfast Food.

CUTS EVERY KERNEL SHARP AND UNIFORM--JUST LIKE A KNIFE



Because it cuts every kernel sharp and uniform, "Le-Page" patent cut on your rolls will Improve The Quality of the product you manufacture.

Not only is The Product Absolutely Uniform in size and shape, but it has that sharp, clean-cut appearance which adds to its attractiveness and increases the sale.

Where the fine stock or feed meal in the product is less VALUE than the cracked material, every miller will appreciate the advantage of "Le-Page" cut in reducing the amount of this material.

IT WILL MAKE 96% CRACKED CORN (WITH 4% OR LESS FEED MEAL)



Four per cent or less feed meal with "Le-Page" cut against fifteen or twenty per cent in the old way will greatly Increase Your Profit. This not only applies to cracked corn but to all cereals where a uniform cut is desired.

Almost a bushel of finished product from a bushel of raw material with "Le-Page" cut against almost one-fifth waste product from the old method will pay you to investigate "Le-Page" cut.

We can furnish complete roller mills, mill rolls, or equip your rolls with "Le-Page" cut to make any size of product desired, producing this with the least waste.

WHY THE "LE PAGE" CUT PRODUCES THESE RESULTS



The Corrugations on the fast roll are lengthwise, without spiral, running against the slow roll with corrugations around the roll, which cut the grain instead of crushing it.

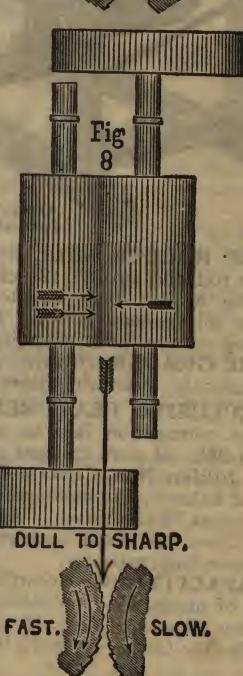
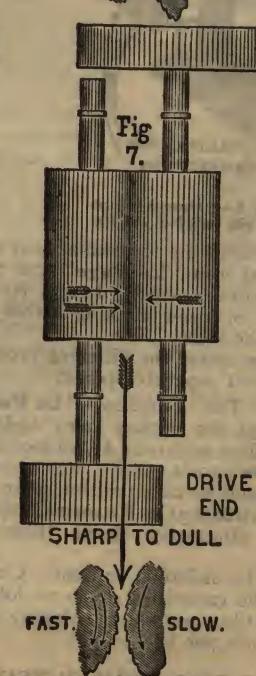
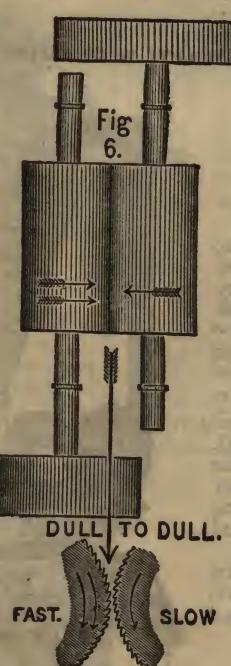
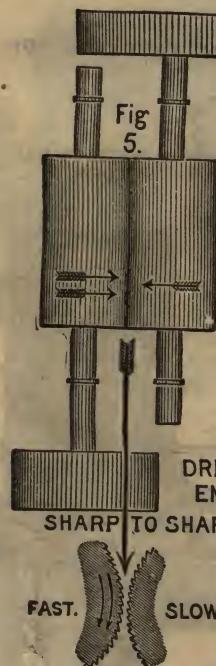
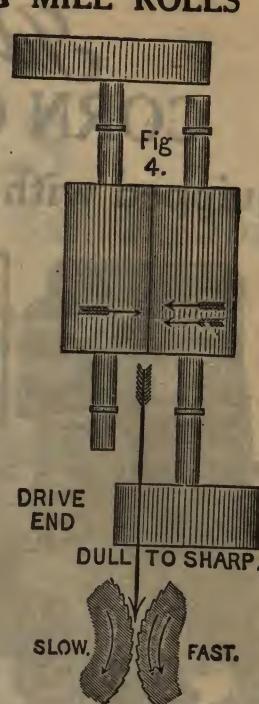
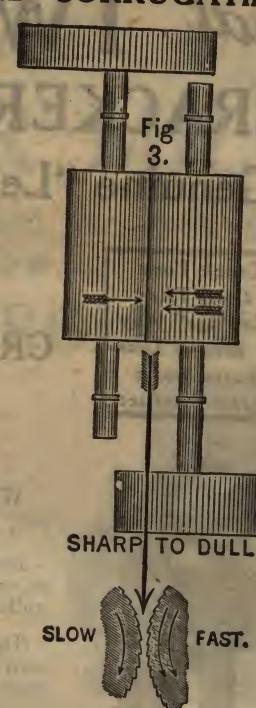
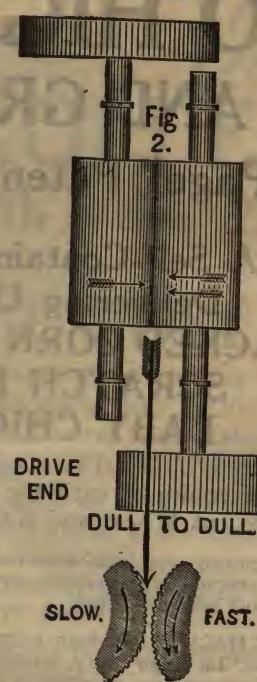
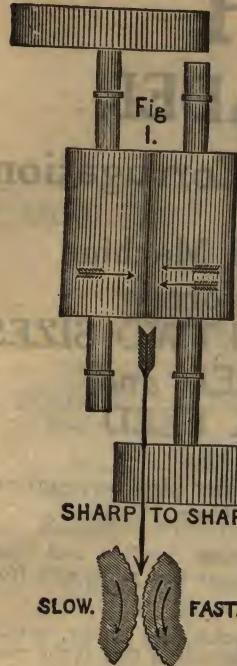
The Shape of the Cut on the slow roll is a deep "U" with a large round bottom, while on the fast roll the shape is similar, except placed in a leaning position with a forward facing cutting edge and round bottom, allowing the grain after being cut to discharge freely, and prevents crushing.

We Have Established Agents at various points in the United States and Canada who are authorized to corrugate rolls with the "LE-PAGE" PATENT CUT. This was done in order to serve our customers more promptly and save freight charges.

Write us regarding this work and we will advise you where to send your rolls and will also mail you a sample of the finished product.

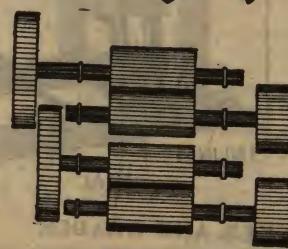


DIAGRAMS FOR GRINDING AND CORRUGATING MILL ROLLS

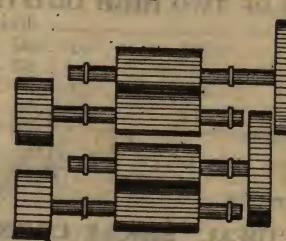


RIGHT
HAND
MILL

FAST ROLL IN FRONT
DRIVE PULLEY OF
FAST ROLL ON RIGHT
HAND SIDE FACING
FRONT OF MILL



FRONT
Fig. 9



FRONT
Fig. 10

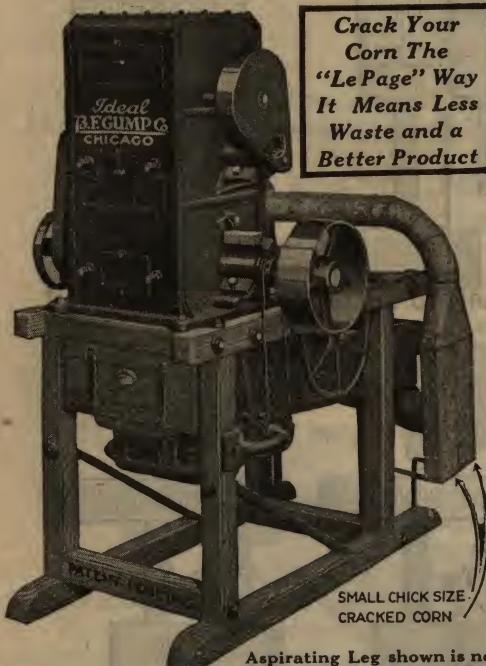
LEFT
HAND
MILL

FAST ROLL IN FRONT
DRIVE PULLEY OF
FAST ROLL ON LEFT
HAND SIDE FACING
FRONT OF MILL

DIAGRAM FOR PLACEMENT OF ROLLS IN FRAMES

Ideal TWO HIGH CORN CRACKER AND GRADER

Equipped with Genuine "Le Page" Patent Corrugation



Aspirating Leg shown is not furnished with Outfit No. 78F700

THE ROLLER MILL consists of an adjustable feed gate, feeder roll and two 6"x12" chilled iron "Le Page" cut rolls, running against our patented convex cutter bars. A very simple adjustment permits the operator making either size cracked corn without changing the rolls.

THE GRADER effectively separates the different products conveniently, delivering them from separate spouts.

EXCLUSIVE FEATURES: The Genuine "Le Page" patent corrugation has no equal for cutting corn and produces 96% of pure cracked product with only 4% of feed meal. The Jubien Non-Centric Drive avoids getting your machine out of balance, eliminates noise and gives a positive, vibratory movement to the sieves. An Automatic Bumper, tapping the sieves at fixed intervals, effectively cleans them and increases their capacity.

CAPACITY varies according to moisture content. Cutting corn of about 15% moisture, the capacities range as follows: Making Cracked Corn—18 to 20 bu. per hour. Making small Chick Size Corn—10 to 12 bushels per hour.

SPECIFICATIONS OF TWO HIGH OUTFIT

Length on floor.....	46 inches
Length, Overall.....	50 "
Width on Floor.....	23 "
Width, Overall.....	38 "
Height to Top of Feeder.....	58 "
Height to Top of Chaff Collector.....	78 "
Diameter of Drive Pulley.....	14x5 "
Speed off Drive Pulley.....	700 R.P.M.
Horse Power required for operating.....	.5

"IDEAL" SINGLE CORN CRACKER AND GRADER

This outfit is similar in construction to that of the two high, except one roll and patented convex cutter bar are used instead of duplicate sets.

NET PRICES

78F700 "IDEAL" Two high corn cracker and grader, complete.....	\$350.00
78F702 "IDEAL" Two high corn cracker and grader, complete with aspirating fan and chaff collector.....	425.00
78F704 "IDEAL" Two high roller mill only.....	250.00
78F706 "IDEAL" Corn grader only.....	100.00
78F708 "IDEAL" Single corn cracker and grader, complete.....	200.00

A Self-Contained Machine
Delivering Uniformly
CRACKED CORN IN TWO SIZES
SCRATCH FEED and
BABY CHICK FEED

When equipped with the proper size corrugation, will also cut Wheat and Kaffir Corn.

Recognizing its high nutritive value, poultry and stock raisers are today demanding evenly cracked corn, free from hulls, dust and impurities.

The "IDEAL" two high corn cracker and grader, cutting corn the "Le Page" way, accomplishes all of this at the minimum of expense for installation and operation.

COMPLETE WITH ASPIRATOR AND DUST COLECTOR



Ideal ROLLER MILLS

Furnished with Either Plain or S-K-F Ball Bearings

SINGLE POST ROLLER MILLS

Strong and Durable Construction!

EQUIPPED WITH TRAMMING DEVICE--

Release Springs --- Throw Out Lever.

ADJUSTABLE ROLLER FEEDER.

Furnished Either Belt or Gear Drive.

Require Minimum Power, Floor Space
and Attention.

DELIVER MAXIMUM CAPACITY,
SERVICE AND EFFICIENCY.

Can Be Used Either As A Single or Post
Roller Mill.



"IDEAL" Plain Bearing Single Post Roller Mill.

Made in three sizes, containing all the essential features of a large roller mill, viz.: solid base, roll setting device, throw-out lever, trammimg device, coil springs, etc. Furnished with either plain bearings or S-K-F self aligning ball bearings of ample size.

The workmanship is of the very best. The castings are of gray iron and the rolls are of chilled iron with cold rolled steel journals.

Furnished with either belt or gear drive, cut gears and Bakelite-Micarte pinions, which are not affected by water, do not deteriorate, and have greater life than metal.

We can furnish brackets and bottom board to mount on post or wall, if desired, at small cost.

Rolls will be corrugated regular to suit product desired.



"IDEAL" S-K-F Ball-Bearing Single Post Roller Mill.

SIZES, SPECIFICATIONS AND NET PRICES

Sizes.....	6x12	6x15	6x20			
Height.....	26 in.	26 in.	26 in.			
Width.....	34 in.	37 in.	42 in.			
Depth.....	18 in.	18 in.	18 in.			
Speed, R. P. M.....	600	600	600			
Fast Pulley.....	8x4 in.	8x4 in.	10x4 in.			
Slow Pulley.....	14x3 in.	14x3 in.	16x4 in.			
Capacity, Feed.....	15-20 Bu. per Hour	20-25 Bu. per Hour	25-35 Bu. per Hour			
Capacity, Screenings.....	8-10 Bu. per Hour	10-12 Bu. per Hour	12-16 Bu. per Hour			
Weight, lbs.....	440	500	600			
	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Plain Bearing.....	78F810	\$225.00	78F812	\$240.00	78F814	\$265.00
S-K-F Ball Bearings.....	78F811	295.00	78F813	310.00	78F815	335.00

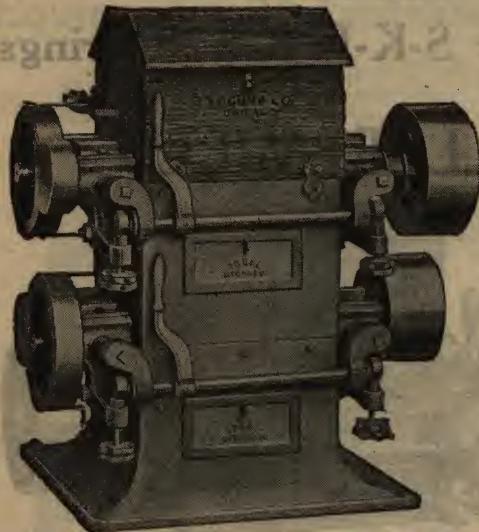
PRICE FOR GUMP'S "IDEAL" POST ROLLER MILLS WITH "LE PAGE" PATENT CUT

For making cracked corn, wheat, rye, barley, rice, kaffir corn, peas, beans, seeds, grains for poultry and stock feeds, breakfast foods, etc.

Prices with Le Page Patent Cut

Sizes.....	6x12 in. Rolls	6x15 in. Rolls	6x20 in. Rolls			
	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Plain Bearings.....	78F816	\$250.00	78F818	\$275.00		

"Ideal" Two Pair High Roller Mills



Two Pair High Plain Bearing Roller Mill

THE FRAME is in sections, each one cast solid and fastened to the other with machine screws. Each section is equipped with doors for examining the stock.

THE ROLLS are chilled iron with cold rolled steel journals and are corrugated regular to suit the buyer's requirements.

THE FEEDER is of the shaker type with adjustable gate and is driven from a pulley on the top roll journal. It is also fitted with a scalping shoe to remove roughage, sticks, etc.

THE ROLL ADJUSTMENTS are independent of the throw-out levers, which obviate the necessity of resetting the rolls after they have been parted and thrown back into grinding position.

WE HAVE INCORPORATED IN THIS MILL several improvements of our own design, such as trammimg adjustments, heavy coil release springs, roll grinding adjustments and throw-out levers.

Each mill is furnished with machine cut gears on the slow side drive (pinions are fibre) unless otherwise ordered.

"Ideal" roller feed mills form an "Ideal" mill for grinding and making breakfast foods of different descriptions, whole wheat flour, table meal, ground feed, scratch feed, coffee, spices, screenings, cereals, seeds, or anything a roller mill is adapted for. They are especially desirable, as they require less space for the same capacity than any other mill on the market.

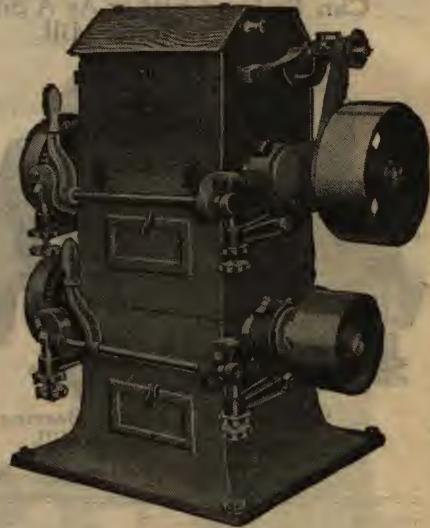
Prices include rolls corrugated regular to suit the product desired.

Require Minimum	Power Floor Space Attention	Deliver Maximum	Capacity Service Efficiency
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Furnished with Either Plain or S-K-F Ball Bearings

"Ideal" Two Pair High Roller Mills in plain and ball bearing have the same construction with the exception of the bearings. In the ball bearing Roller Mills S-K-F ball bearings of large dimensions entirely enclosed in metal housings, which makes them dust-proof and require oiling but a few times a year, replace the plain bearings. This method of oiling is the most perfect that can be built, and reduces friction to the minimum so that a mill of this construction forms the most light-running and efficient mill that can be built of this type.

Improved Regulating Devices Insure Efficient Operation

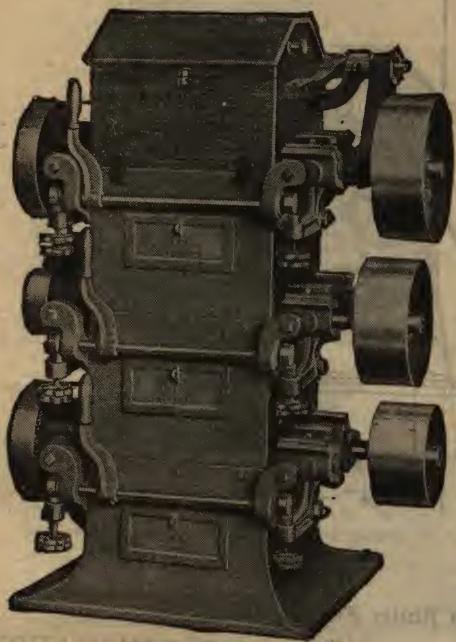


Two Pair High Ball Bearing Roller Mill

DIMENSIONS AND PRICES

SIZES	7x14 Inch Rolls	7x15 Inch Rolls	7x16 Inch Rolls			
Height over all.....	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.			
Width over all.....	3 ft. 4 in.	3 ft. 5 in.	3 ft. 5 in.			
Length over all.....	2 ft. 1 in.	2 ft. 1 in.	2 ft. 1 in.			
Floor Space	2 ft. 4 in. x 2 ft. 5 in.	2 ft. 5 in. x 2 ft. 6 in.	2 ft. 5 in. x 2 ft. 6 in.			
Drive Pulley, Top.....	14 x 5½	14 x 6	14 x 6			
Drive Pulley, Bottom.....	12 x 5½	12 x 6	12 x 6			
Speed Top Roll, R.P.M.....	500	500	500			
Horse Power required.....	3 to 5	3½ to 5½	4 to 6			
Shipping Weight.....	1400	1500	1600			
Capacity, Bushels.....	15 to 25	17 to 27	20 to 30			
	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Plain Bearing.....	78F830	\$525.00	78F834	\$535.00	78F838	\$545.00
Ball Bearing.....	78F832	665.00	78F836	675.00	78F840	685.00

"Ideal" Three Pair High Roller Feed Mills



Three Pair High Plain Bearing Roller Mill

Require Minimum	Power Floor Space Attention	Deliver Maximum	Capacity Service Efficiency
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Furnished with Plain or S-K-F Ball Bearings

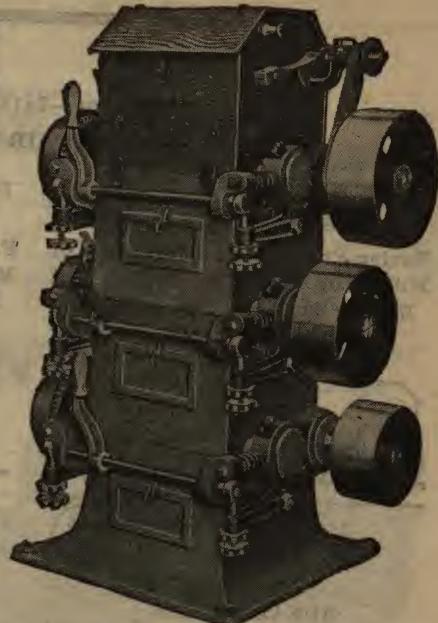
No expense has been spared to make "Ideal" Roller Mills as good as they can possibly be made. They are designed to produce the best finished product, to occupy small space, to require small power and to give the greatest capacity for the space and power required.

They are the "Ideal" mill for those who desire a compact, highly efficient mill for making all kinds of ground and cracked feeds.

They are furnished with either plain bearings or with S-K-F ball bearings as desired.

The construction of both mills is the same except in the ball bearing mill S-K-F ball bearings of large dimensions of the self-aligning type, entirely enclosed in dust-proof housings replace the plain bearings. They reduce friction to the minimum, require oiling but a few times a year, and represent the most efficient grinder of this type that can be built.

Equipped with Every Device for Efficient Operation



Three Pair High Plain Bearing Roller Mill

THE FRAME is in sections, each one cast solid and fastened to the other with machine screws. Each section is equipped with doors for examining the stock.

THE ROLLS are chilled iron with cold rolled steel journals and are corrugated regular to suit the buyer's requirements.

THE FEEDER is of the shaker type with adjustable gate and is driven from a pulley on the top roll journal. It is also fitted with a scalping shoe to remove roughage, sticks, etc.

THE ROLL ADJUSTMENTS are independent of the throw-out levers, which obviates the necessity of resetting the rolls after they have been parted and thrown back into grinding position.

WE HAVE INCORPORATED IN THESE MILLS several improvements of our own design, such as trammimg adjustments, heavy coil release springs, roll grinding adjustment and throw-out levers.

FURNISHED WITH MACHINE CUT gears on the slow side drive (pinions are fibre) unless otherwise ordered.

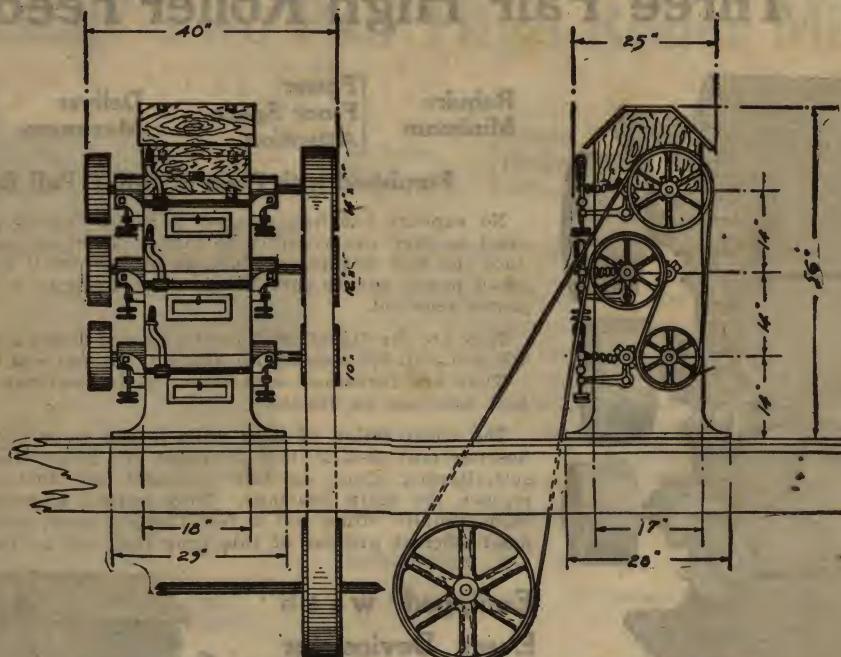
Prices include rolls corrugated regular to suit product desired.

SPECIFICATIONS AND PRICES

Size	7x14 Inch	7x15 Inch	7x16 Inch
Height over all	4 ft. 8 in.	4 ft. 9 in.	4 ft. 9 in.
Width over all	3 ft. 4 in.	3 ft. 5 in.	3 ft. 6 in.
Length over all	2 ft. 1 in.	2 ft. 1 in.	2 ft. 1 in.
Floor Space	2 ft. 4 in. x 2 ft. 5 in.	2 ft. 5 in. x 2 ft. 6 in.	2 ft. 6 in. x 2 ft. 7 in.
Drive Pulley, Top	14x5½	14x6	14x6
Drive Pulley, Middle	12x5½	12x6	12x6
Drive Pulley, Bottom	10x5½	10x6	10x6
Speed Top Roll	450 R. P. M.	450 R. P. M.	450 R. P. M.
Power Required	5 to 8 H. P.	6 to 9 H. P.	7 to 10 H. P.
Shipping Weight	2140	2240	2340
Capacity	20 to 30 Bu.	25 to 35 Bu.	30 to 45 Bu.

	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Price Plain Bearings	78F850	\$690.00	78F854	\$705.00	78F858	\$720.00
Price S-K-F Ball Bearings	78F852	890.00	78F856	905.00	78F860	920.00

Dimensions and Drives for "Ideal" Roller Mills



Dimensions—7x14 "Ideal" Three Pair High Roller Feed Mill.

DIAGRAM FOR TWO PAIR HIGH "IDEAL" MILL.

Drive on Left Hand Side
Facing Front of Mill. Top Fast Roll in Back.

Fig. No. 1

Drive on Right Hand Side
Facing Front of Mill. Top Fast Roll in Front.

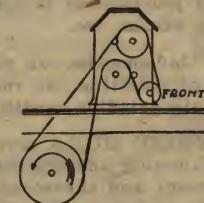
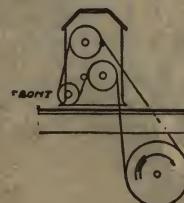
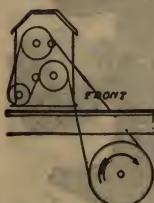
Fig. No. 2

Drive on Right Hand Side
Facing Front of Mill. Top Fast Roll in Back.

Fig. No. 3

Drive on Left Hand Side
Facing Front of Mill. Top Fast Roll in Front.

Fig. No. 4



"IDEAL" MILLS

Are equipped with either plain bearings or S-K-F ball bearings, chilled iron rolls, Bakelite-Micarta gears (better than raw-hide - noiseless), machine moulded cast iron pulleys.

Throw-out levers which work separately on each roll. Coil springs which allow metal, stones, etc., to pass thru the rolls without injuring them.

Scalping feeder which removes foreign material, such as straw, sticks, etc.

Doors after each roll for examining stock.

TO GET RESULTS IN MAKING CRACKED CORN, HAVE YOUR ROLLS EQUIPPED WITH THE "LE PAGE" PATENT CUT. (Pat. Reg. U.S. Pat. Off.)

AN "IDEAL" COMBINATION

An "Ideal" three pair high roller feed mill with top pair of rolls equipped with the "Le Page" patent cut for making 96% cracked corn with only 4% meal for scratch and horse feed. Middle pair of rolls equipped with the "Le Page" patent cut for making a second break cracked corn for chick food and cut wheat for chicken feed.

Bottom pair of rolls corrugated for making feed or meal — making an all around mill.

Prices on Application.

DIAGRAM FOR THREE PAIR HIGH "IDEAL" MILL

Drive on Right Hand Side.
Facing Front of Mill. Top Fast Roll in Front.

Fig. No. 5

Drive on Right Hand Side.
Facing Front of Mill. Top Fast Roll in Back.

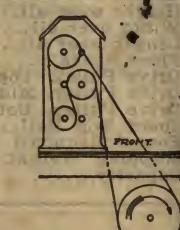
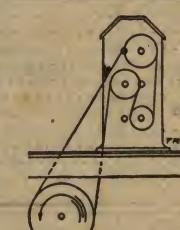
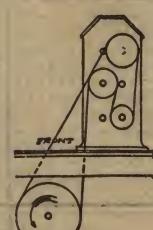
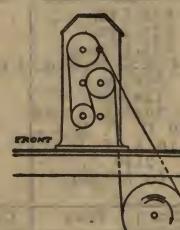
Fig. No. 6

Drive on Left Hand Side
Facing Front of Mill. Top Fast Roll in Front.

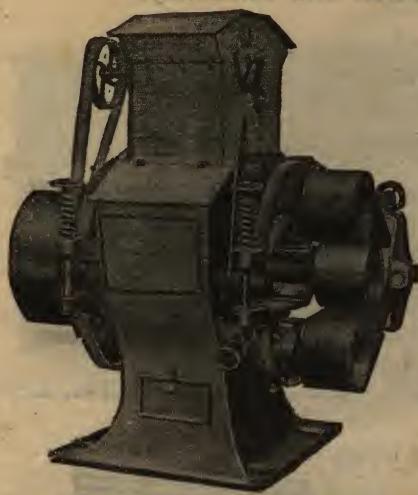
Fig. No. 7

Drive on Left Hand Side
Facing Front of Mill. Top Fast Roll in Back.

Fig. No. 8



FEED MILLS AND SCROLL MILLS



"WILLFORD" THREE ROLLER MILLS have been on the market for many years. The Universal satisfaction they give is the best proof of their worth.

"WILLFORD'S" LIGHT RUNNING THREE ROLLER MILL

For Grinding Feed, Corn, Oats, Barley, Graham and Meal. Simple Adjustment. Low Power Cost. Large Center Roll acts as Flywheel.

Roller Feeder is not Choked by Twine, bits of Cob, Silk, etc. Handles Damp Corn Successfully.

The "WILLFORD" Three Roller Mill is too well known to require much description. It is strongly built, the frame being cast in one piece and the parts to it have machine finished joints, thus making a substantial machine. The roll bearings are large and long. The adjustments are simple and efficient. Hand screws with jam wheels enable the operator to set the rolls for either fine or coarse grinding. Rolls are easily thrown apart and steel coil springs allow the rolls to be spread apart should nails or other hard particles come between them. The small rolls can be set independently of each other.

It has large capacity for its size rolls and the power required. It requires but a single belt drive on the two smaller size machines. (The larger or No. O size has a drive pulley on each side. The middle roll is large and heavy and acts as a balance wheel making a lighter running mill. The large roll provides a differential using the same size pulleys on all three rolls. This adds to the capacity as well as increases the grinding efficiency.

The feeder is automatic and will not clog or become choked by twine, cobs, or such material. It will also handle wet or dry corn, although wet corn will, of course, decrease its capacity. Prices are f.o.b. Factory.

78F800 Sizes, Capacity and Net Prices

Size	EXTREME			DRIVING PULLEY		SIZE ROLLS			CAPACITY PER HOUR BUSHELS				Speed R. P. M.	Horse Power	Weight Lbs.	Net Price Each					
	Height Ft. In.	Width Ft. In.	Length Ft. In.	Diam. Inches	Face Inches	Upper & Lower Rolls, Inches	Middle Roll Inches	Mixed Feed		Graham											
								Coarse	Fine	Meal	Flour										
0	4	7	2	8	5	8	18	4½	20x6	20x14	60 to 70	30 to 40	30 to 40	30 to 40	600	12	3000	\$495.00			
1	4	7	2	8	3	8	18	7½	12x6	12x14	30 to 40	20 to 30	15 to 20	15 to 20	600	8	1850	405.00			
2	3	11	2	4	3	4	16	6½	10x6	10x10	20 to 30	10 to 20	8 to 12	8 to 12	700	5	1200	325.00			

THE "BUCKLEY DISINTEGRATOR"

A Necessity for Every Flour Mill.

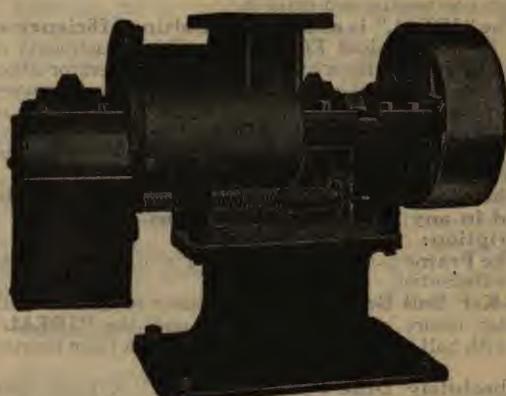
Does Not Heat the Stock. Does not Pulverize Impurities. Produces Better, Whiter Flour.

Middlings May be Scalped Closer. Cleaner Middlings Tail to Next Reduction.

The "BUCKLEY" is probably the best known and most widely used mill of its kind on the market. It is used in flour, buckwheat and rye mills to make more and better flour from a bushel of grain. It is used in meal mills to soften the meal to exactly resemble buhr ground meal and thus sell at the highest prices.

It is designed to handle any stream of fine middlings or flat tailings in flour mills. The first place in which it can be profitably installed is on fine original break middlings, such as have been dusted through No. 7xx, No. 8xx, or No. 9xx cloths on break sections of sifter. Or it will give wonderful benefits when installed on any stream of middlings that have had one or more smooth roll reductions so that they are sized down to a reasonable degree of fineness. By flat tailings we refer to scalps from middlings sections of sifter.

The "BUCKLEY" does not heat the stock and it makes a cleaner, whiter flour because it does not pulverize impurities. Middlings may be scalped closer and therefore cleaner middlings tail to the next reduction. Strongly made. Will give excellent service. Speed 200 to 300 r.p.m.



THE SUN NEVER SETS ON BUCKLEYS

"Buckles" are Favorites in Foreign Lands as well as at Home. "That The Sun Never Goes Down on the Buckley" is a testimonial of its Efficiency.

78F802

SIZES, CAPACITIES AND NET PRICES.

No.	Length Over All Inches	Height Over All Inches	Width Over All Inches	Pulley Inches	Shipping Weight Pounds	Capacity Roll Surface Inches	Net Price Each
0	24½	18	12	12x3	175	24	\$130.00
1	29¼	21½	12	12x4	250	60	150.00

"Ideal" Ball Bearing Centrifugal Reel

"Ideal" from the Standpoint of Both Construction and Efficiency.

No Gears—To Get out of Alignment and to Bind and Break.

S-K-F Self-Aligning Ball Bearings—Absolutely Dust Proof.

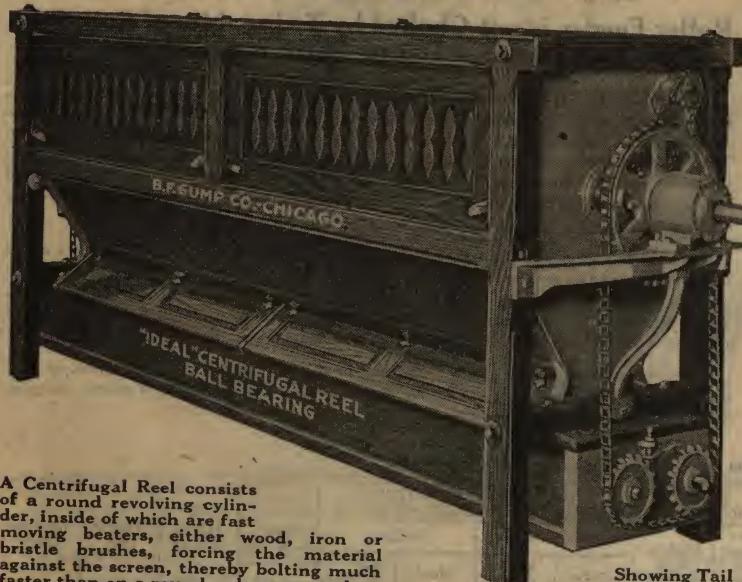
Independent Cloth Cylinder and Beater Shafts—Shafts Cannot Stick.

Perfect Lubrication—Light Running—Minimum Power Required.

Cast Iron Ends—Sturdy, Rigid Frame—Durable and Substantial.

Removable Pockets in Tail End—Open End or Closed End Reel in Moment's Time.

Standard Beater Equipment or Spiral Brushes—Adjustable Beater Spiders.



A Centrifugal Reel consists of a round revolving cylinder, inside of which are fast moving beaters, either wood, iron or bristle brushes, forcing the material against the screen, thereby bolting much faster than on a round or hexagon reel.

The "IDEAL" meets every requirement needed to make a successful centrifugal reel both from the Millers' and the engineers' point of view.

In mechanical design the "IDEAL" excels every other machine of its kind on the market. Its sturdy construction, S-K-F Ball Bearings, independent cloth cylinder and beater shafts, and the elimination of gears produce a reel that is as nearly perfect mechanically as modern engineering can make it.

The "IDEAL" is as strong in Bolting Efficiency as it is in Mechanical Efficiency. The adjustments of the bolting mechanism are such that the operator absolutely controls the movement of the stock through every part of the reel. The choice of either steel beaters or spiral brushes enables the "IDEAL" buyer to get any style of bolting device he prefers with all the distinctive features of the "IDEAL" mechanical design.

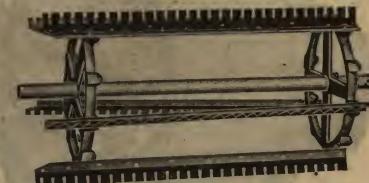
The combination of all these features cannot be found in any other Centrifugal Reel.

Description:

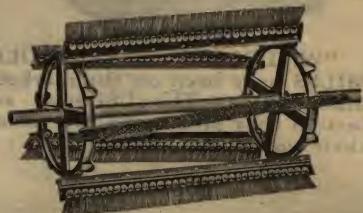
The Frame is of heavy hardwood with cast iron ends, very substantial.

S-K-F Ball Bearings on the beater shaft and cloth cylinder insure perfect lubrication and the "IDEAL" runs with half the power needed to operate a plain bearing reel.

Absolutely Dust Proof Bearings. A large open space separates the end of the reel and the S-K-F Ball Bearings which are entirely enclosed in a metal housing and are absolutely dust proof. They require oiling but a few times a year and the cleanliness of the machine,



Showing the Steel Beaters as Regularly Furnished



The Brush Beater which can be furnished. Adjustable to any desired pitch for fast or slow movement of the stock and any desired bolting result.

Showing Tail End of Reel

saving in oil and wear and tear on the reel, saves many times their cost.

The Beater Shaft and Cloth Cylinder Cannot Stick, as each are mounted on separate ball bearings and do not touch at any point. This feature alone will recommend the "IDEAL" to the Miller who has ever experienced trouble of this nature.

The "IDEAL" Has No Gears to get out of alignment and to bind or break. The use of sprockets and chain mean a saving in power, operating troubles, and repairs, and greatly reduce noise.

The Cloth Cylinder is strongly made. Both the head and tail ends are made of cast iron with angle steel ribs (wood filled) and steel hoops (cloth wrapped). Sections, provided with pockets, in the tail end of the cylinder, which can be quickly removed, provide an open or closed end reel. In this way the reel is adapted to all conditions of bolting.

The Beater as regularly furnished is made entirely of metal. Adjustable cast iron spiders, with steel ribs and adjustable finger strips enable the operator to increase or retard the speed of the stock through the reel so he can control the bolting through the entire length of the cylinder and get any desired result. We can furnish Spiral Brushes, as illustrated, in place of steel beaters at a slight advance in price when so ordered. Cast Iron Conveyor Ends with chain adjustments and Revolving Outside Brush, with adjustments at both ends to give perfect cloth contact are other features of the "IDEAL".

NO OTHER REEL HAS ALL THESE FEATURES.

Cat. No.	Size	Size of Frame			Length Overall	Size of Reel	Height to Center of Pulley	Size Pulley	Speed	Shipping Weight Lbs.	Price
		Length	Width	Height							
78F862	2	8' 6"	2' 5"	4' 0"	10' 3"	20"x7"	33 1/4"	12x4"	240	1120	\$435.00
78F864	4	9' 6"	2' 11"	4' 8"	11' 3"	26"x8"	37 1/2"	16x4 1/2"	180	1400	500.00
78F866	6	9' 8"	3' 5"	5' 1"	11' 6"	32"x8"	42"	20x5"	150	1900	560.00

Round, Inter-Elevator and Hexagon Reels

ROUND REEL FOR SCALPING



This reel is used for bolting and scalping—is strong and substantial, and having no longitudinal ribs to obstruct the flow of the material—runs exceedingly light and bolts very fast. It is provided with wood heads in both ends of the cylinder to fasten the cloth to and has an adjustable revolving brush to keep the cloth clean. It is neatly enclosed in a wide frame, the ends and cant boards made of poplar or white pine. They are made with either single or double conveyors and pulleys or sprockets are used for driving—which ever are desired. Wood flight conveyors are furnished unless otherwise ordered. Steel conveyors can be furnished at an advance in price. We also line the cant boards with sheet steel where so ordered, for which we make an extra charge. When steel conveyors are wanted, we must know whether they discharge at head or tail end.

INTER-ELEVATOR FLOUR DRESSER

A flour dresser containing all the features of the round reel described above, with the addition of a solid drum on the inside that keeps the stock close to the silk at all times. The flights attached to this drum control the flow of the stock, preventing a too rapid flow from head to tail.

It has a large capacity and is especially desirable for a reboiler and for this purpose is considered by most millers to be superior to the gyratory sieve bolter.

For millers who prefer the reel system to the sieve, it is the best known machine of its class and will give perfect satisfaction in every detail.

Its construction guarantees long service with a minimum cost for repairs.



HEXAGON REEL FOR SCALPING



This reel is used mostly for scalping and in some cases is used for bolting. The reel itself is hexagon in shape, made of longitudinal ribs securely bolted to cast iron spiders. The construction of the frame and conveyors is similar to the Round Reel except that on this machine we do not use a brush cloth cleaner. In scalping, a cleaner is not necessary, but for some purposes where it is required, it is customary to have a whipper brush tacked underneath the cover and allow it to rest against the cloth of the Reel, thus keeping it clean. They are also built so they can be placed on top of other Reels, Flour Dressers or Centrifugals, making it very convenient to rebolt the product that has been scalped on one of these Reels.

78F838

SIZES, DIMENSIONS, SPEEDS AND NET PRICES—(WITHOUT CLOTH).

Size No.	Size Reel Ft. In.	Size of Frame			Size of Pulley Inches	Speed R.P.M.		Round Reel		Inter-elevator Reel		Hexagon Reel		Extra for Cross Shaft Drive
		Length Ft. In.	Width Ft. In.	Height Ft. In.		Pulley Drive	Gear Drive	Price Single Conve.	Price Double Conve.	Price Double Conve.	Price Single Conve.	Price Double Conve.		
1	20x7*	8-6	2-5	4-0	16x3½	42	126	\$215.00	\$240.00	\$275.00	\$215.00	\$240.00	\$20.00	
2	26x8	9-6	2-11	4-8	18x4½	32	96	275.00	295.00	325.00	275.00	295.00	30.00	
3	32x8	9-8	3-5	5-1	20x5½	28	84	320.00	345.00	370.00	320.00	345.00	40.00	

When equipped with Ball Bearings (S. K. F.) add extra to No. 1 size, \$60.00. No. 2 size, \$70.00. No. 3 size, \$80.00. Ball Bearing Cross Shaft Drives furnished when desired—Prices on Application.

Prices quoted on Ball Bearing Reels do not include Ball Bearing Counter-shaft.

All orders furnished with plain bearings unless otherwise specified.

Other Sizes furnished.

“Ideal” SIFTER SCALPER

For Scalping and Bolting Rye and Buckwheat Flour, Cornmeal, Spices, Etc.



WHEN USED FOR BOLTING SPICES: In this class of work it is customary to make two or three separations, therefore, the machine is built so that it can be equipped with from one to three sieves, according to the number of separations that are to be made. Where only two separations are made, one sieve is used. That which falls over the sieve is the hulls, and that which passes through the sieve, the finished product. When three separations are desired, it is equipped with two sieves; the top for scalping the hulls; the second sieve for scalping the product that has not been ground sufficiently fine to go into the finished material. That which passes through the

upper and lower sides of the box and to stationary landing boards above and below. These landing boards are a part of the machine and the stationary spouts are fastened to them.

With each machine we furnish a flowsheet and complete directions for sputting from and to each opening.

The sieve box is counterbalanced and is operated with an S-K-F ball bearing eccentric thus avoiding any wear, making a light running machine. The main bearings are large, babbited and ring oiling and of the latest type.

The sifter box is hung from four hangers which are pitched slightly forward, so that the box not only shakes back and forth, but also raises and lowers slightly, thus keeping the stock from closing the meshes in the sieves by sticking to it.

On the top of the machine we have an automatic bumper which taps the sieves at regular intervals and keeps them clean.

78F868

SIZES, SPECIFICATIONS AND NET PRICES.

Size No.	Extreme Height	Extreme Width	Extreme Length	Sq. Ft. Cloth Surface	Hgt. Floor to Where Feed Enters	Hgt. Floor to Bottom of Outlet Shelf	Hgt. Floor to Center of Drive Pulley	Size Drive Pulley	Speed R.P.M.	Approx. Shipp'g Weight Lbs.	Net Price, Each
1	41"	50"	57"	27	41"	2 $\frac{3}{4}$ "	21"	6x4"	500 to 600	400	\$325.00
2	41"	56"	67"	33	41"	2 $\frac{3}{4}$ "	21"	6x4"	500 to 600	500	\$395.00



This machine is designed as a scalper for bolting barley, rye and buckwheat flour; cornmeal, spices, etc. The sifter box contains three sieves and a blank bottom.

WHEN USED FOR BOLTING RYE OR BUCKWHEAT, the top sieve is used for scalping the bran; the second sieve for scalping the coarse middlings; the lower sieve for scalping the fine middlings; the flour passing through to the blank bottom which takes the flour to the point of discharge.

WHEN USED FOR BOLTING CORNMEAL, the top sieve is for scalping the bran, the second sieve for scalping the coarse grits; the third sieve for scalping the medium grits, and that which passes through is the finished meal and the blank bottom takes it to the point of discharge.

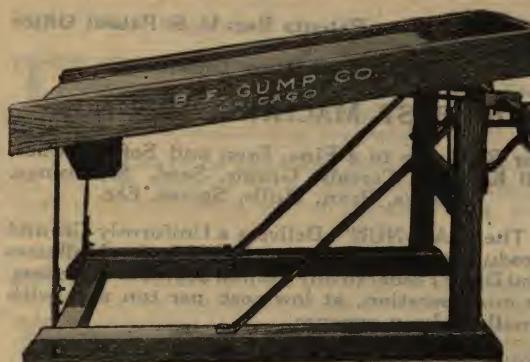
WHEN USED FOR BOLTING BARLEY AND MALT, the top sieve is for scalping the bran; the second sieve for coarse grits, and the third sieve to scalp the fine grits. That which passes through is finished flour and the bottom blank takes it to the point of discharge.

second sieve is the finished product. When it is desired to make four separations the machine is equipped with three sieves and the separations made similar to those mentioned above for bolting ground grain.

The flow in the machine can be arranged for many purposes for use in spice mills, cereal plants, in fact, where any ground grain or pulverized products are bolted into three or four separations.

The material is sputted into and from the machine through flexible cloth spouts which are attached to the

"IDEAL" CORN MEAL AND FEED SCREEN



Showing The Regular "IDEAL" Cornmeal and Feed Screen Without Bumper

The opposite illustration shows the "IDEAL" Corn Meal and Feed Screen with a bumper which vibrates the wire and keeps the stock turning so it will not stick in the meshes and will pass through more readily. This also aids the travel of the stock and will increase the capacity of the sieve from twenty-five to fifty per cent.

We can supply this bumper equipment for any make sieve of similar construction. Give width, length and height of sieve box. Prices on application.

The application of this bumper will increase bolting capacity 25 to 50 per cent.

78F870 Net price, without bumper, including wire sieve—14, 16, 18, 20, or 24 mesh, each.....\$42.50

78F871 Net price, with bumper, including wire sieve—14, 16, 18, 20, or 24 mesh, each.....\$57.50

78F872 Extra sieve frames, 24 x 50 inches, without cloth, each.....\$5.00

NOTE—State what mesh wire or perforated sieve is wanted. Unless otherwise ordered, we will send 18 mesh for regular corn meal sieve.

NET PRICES FOR EXTRA SIEVES WITH FRAME.

	Per Sieve
12, 14, 16 or 18 mesh, Tinned Wire Cloth.....	\$6.50
20 mesh, Tinned Wire Cloth.....	6.90

Capacity 20-25 Bushels Per Hour
Adaptable for Many Purposes

This is a handy and popular little machine. It is adapted to a great many purposes, is used extensively for rough cleaning of grain, and for separating cobs and silk from corn after the crusher, as well as for regular corn meal sieve. Can be clothed with any mesh wire or perforated metal. Can be adjusted by raising or lowering the tail of sieve, increasing or decreasing the capacity. Can be clothed with two numbers of cloth and give two products, allowing the coarse product to tail over. Well made with babbitt bearings and guaranteed first class.

Dimensions, etc. Length, 60 inches; width, 26 inches; height, 38 inches; shaft $1\frac{7}{16}$ x 36 inches; pulley, 6 x 3 inches; weight 150 pounds; revolutions per minute, 600; size sieve, 50 x 24 inches.



Showing The "IDEAL" Cornmeal and Feed Screen With Bumper.

	Per Sieve
24, 26, 28 or 30 mesh, Tinned Wire Cloth.....	\$7.40
Stock Sizes of Perforated Zinc.....	9.00

"IDEAL" SPECIAL FEED SCREEN



Furnished With or Without Bumper
Capacity 35-50 Bushels Per Hour
For Grading All Kinds of Ground Feed or Meal.

This is larger in size and capacity than our regular Feed Screen but almost the same in appearance. It is specially made for grading all kinds of ground feed, corn meal, graham, spices, coffee or any dry material. It is made with double sieves which are removable, and which allows separating ground material into two or three different grades, thus eliminating the coarse material on the first sieve and the fine material on the second one, a feature greatly superior to a single sieve machine.

Made with double wrought iron pitmans, babbitt boxes and balance wheel. Size of Sieves, 36 x 72"; capacity 35 to 50 bushel per hour; pulley 7" x 3"; speed, 500 r. p. m.

The "IDEAL" Special Feed Screen can also be furnished with a bumper as described above. The capacity will be increased from 25 to 50%.

78F874 Net Price, without bumper including wire sieves, not finer than 24 mesh.....\$ 89.50

78F875 Net Price, with Bumper, including wire sieves, not finer than 24 mesh.....109.50

78F876 Extra Sieve Frames, 36 x 72 in., without cloth, each.....10.00

We make all sizes and kinds of Feed Screens for Special Uses.

We Build Special Screens to Order. Tell Us the Kind of Work the Screen Must Be Used For and We Will

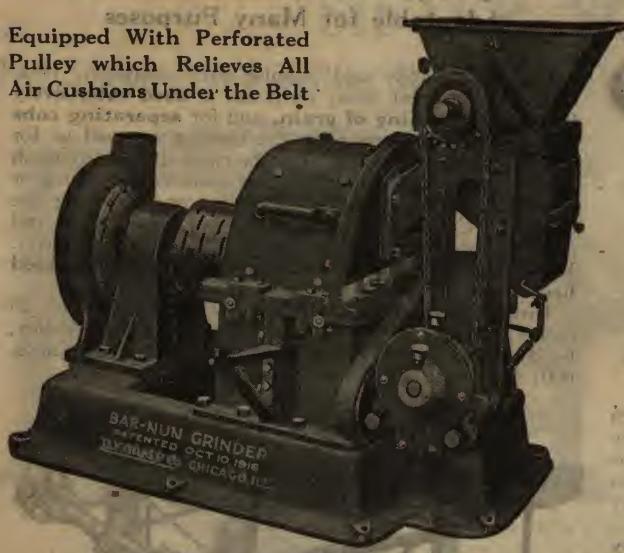
BABN "THE BAR-NUN" GRINDER BABN

Trade Mark Registered

"THE LOW COST GRINDER"

Patents Reg. U. S. Patent Office

Equipped With Perforated Pulley which Relieves All Air Cushions Under the Belt



The Belt-Driven "BAR-NUN" Grinder

THE NEW EXPELLING FEEDER is automatic, will feed the material in an even stream and remove all Metal, Iron, Stones---in fact anything heavier than that to be ground. This device alone should recommend the "BAR-NUN" as it prevents any material liable to cause a spark from getting into the grinding chamber. Driven from the main shaft by a belt which in turn drives a worm and gear, reducing the speed which is transmitted to the feed roll by means of sprockets and chain.

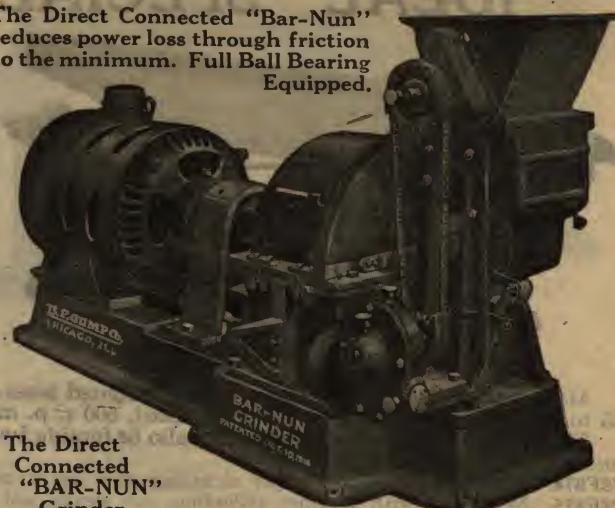
THE DIRECT CONNECTED SUCTION FAN attached to the grinding shaft, always runs at the same speed as the machine so as to remove just the amount of excess air made by the beater plates, eliminates all back pressure and prevents dusting of the finished material coming from the machine.

THE GROUND MATERIAL is discharged into the steel hopper under the mill, by the centrifugal force of the beater plates and may be spouted to a conveyor, elevator leg or bagged, whichever is desired, while the excess air pressure is lifted from the hopper (regulated by a valve) and blown into the dust collector, where the dust or heavy material is separated from the air.

The heavier material, on account of the centrifugal force, passes down through the outlet at the bottom of the dust collector where it is spouted into the hopper to discharge with the ground product. The dust-laden air in the center passes up to the discharge opening at the top of the dust collector. The outside of this current of air containing a small percentage of dust is returned to the dust collector (regulated by a valve) by the fan and the warm or free air in the center is released at the top where it is spouted outdoors.

Collection System Approved by
Mutual Fire Prevention Bureau of
Oxford, Mich.

The Direct Connected "Bar-Nun" reduces power loss through friction to the minimum. Full Ball Bearing Equipped.



The Direct Connected "BAR-NUN" Grinder

THE INSTALLATION, OPERATION AND CONSTRUCTION are the same on both the Belt Driven and Direct connected; the Belt Driven machine has a perforated iron pulley to relieve the air cushion under the belt; the Direct Connected machine is equipped with a flexible coupling, 25 horse power ball bearing motor, alternating current, 3 phase, 60 cycle, 220 or 440 volt as regular equipment, but we can furnish other phases and cycles on special order; compensator enclosed in steel box, with **overload relay coils** which throw out the current and stop the motor in case of choke-up in the mill caused by too heavy a feed, and an **ammeter** with push button showing at all times the amount of current being used.

For Capacity---Dimensions and Prices,
See Page 48.

BABN The Direct Connected Grinder is Furnished With a 25 H. P. Ball-Bearing Motor, Automatic Starter with Overload Relay and Ammeter. **BABN**

BAB NUN THE "BAR-NUN" GRINDER BAB NUN

Trade Mark Registered

"The Mill That Makes The Profits"

Patents Reg. U. S. Patent Office

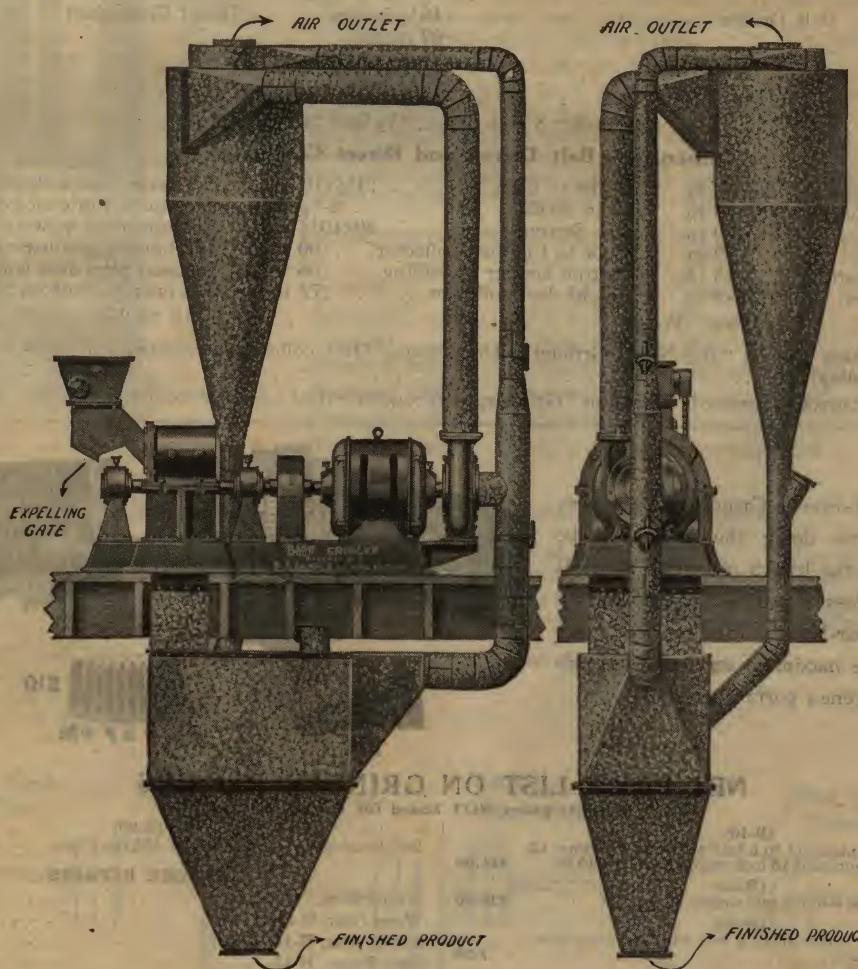
THE "BAR-NUN" is all the name implies. The best machine "BAR-NUN" for reducing to a fine, even and soft product, all kinds of **Cereals, Grains, Seeds, Screenings, Tailings, Bran, Hulls, Spices, etc.**; a grinder which delivers a uniformly ground product of soft texture (suitable for molasses or dairy feeds) to any desired fineness in one operation, at a low cost per ton of grinding with a small up-keep expense.

Material to be ground is spouted to the Feed Hopper having a revolving agitator, under which is the feeding roll (two styles—a small corrugation for grain, seeds, etc., a wing type for bran, hulls and other light material), working in conjunction with an adjustable steel slide which regulates the amount of material fed into the grinding chamber.

At the Front of the Feeder is an Adjustable Air Gate (glass front) the regulation of which determines the amount of air taken into the machine, making the separation between the material to be ground and the stones, nails, metal and other substances, which should be expelled, the latter dropping out of the gate automatically while the material to be ground is drawn into the grinding chamber. This separation is controlled entirely by the amount of air admitted, which varies according to the weight of the material; for this reason it is either necessary to have the spout leading to the feed hopper reasonably tight, or if an open hopper the material being ground should be allowed to pile up over the feeding roll, so that no great amount of air can enter the machine except at the air gate.

The Capacity depends upon the fineness to which the material is reduced and to the amount of moisture the stock contains; speaking generally, on screenings, the capacity varies from 1000 to 1800 pounds per hour and on whole grains, such as barley, rye, corn, oats, etc., from 800 to 3000 pounds per hour.

For Capacity, Dimensions and Prices See Page 48.



Collection System Approved By Mutual Fire Prevention Bureau of Oxford, Mich.

Illustration Showing "Bar-Nun" Installation with Dust Collector.
Equipment Can Also be Furnished for Installing in Basement, or Where only One
Floor is Available. Send for Sketch.

BAB NUN

BAB NUN

BAB N DIMENSIONS AND PRICES OF THE "BAR-NUN" BAB N

Trade Mark Registered

"EFFICIENTLY, THE ONLY GRINDER, BAR-NUN" Patents Reg. U. S. Patent Office.



The Grinding is done in a circular chamber, the top half of which consists of corrugated plates against which the material is forced by sixteen swinging beater arms attached with removable pins to an extended disk shrunk on to the main shaft. The lower half of the grinding chamber is enclosed with a perforated or special woven wire screen, the size of perforation or mesh depends upon the fineness to which the material is to be reduced.

Changing or renewing the corrugated top plates, beaters and screens is easily done in a short time. The machine always runs in perfect balance, no trammimg required.

Dimensions

The belt driven and direct connected "Bar-Nuns" are constructed alike, the only difference in dimensions being in the length, speed and shipping weight.

Length on Floor	Belt Driven	- - - - -	40½ inches
Extreme Length	" "	- - - - -	62 inches
Size Hopper	" "	- - - - -	24x36 inches
Speed	" "	- - - - -	3000 R.P.M.
Shipping Weight	" "	- - - - -	1800 lbs.

Size Pulley 8 inch diam., 6½ inch face.

Direct Connected	- - - - -	64 inches
" "	- - - - -	89 inches
" "	- - - - -	24x36 in.
" "	- - - - -	3400 r.p.m.
" "	- - - - -	2800 lbs.

Dimensions Belt Driven and Direct Connected

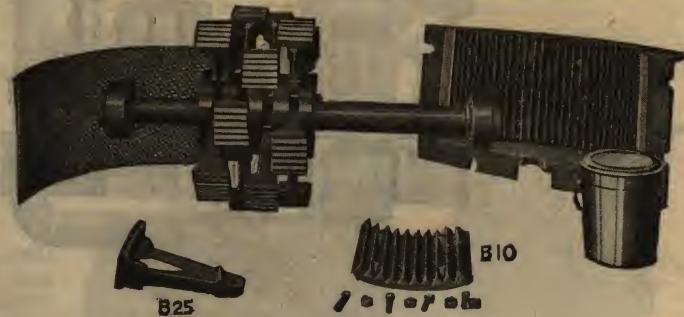
Height to top feeder	38½ in.	Outlet in floor	19¾x10 in.
Height to top grinder	26 in.	Main Shaft	2 7/16 in.
Width on floor	30 in.	Size Screen	30x10 ¼ in.
Extreme width	40 in.	Floor to top dust collector	.96 in.
Floor to center shaft	15 in.	Bottom hopper to ceiling	.68 in.
Inlet, Feed Hopper	11 ½x8 in.	Height dust collector	.72 in.

Horse Power 15 to 25

78F921—Price—Belt Driven "Bar-Nun" Grinder with complete Dust collector equipment (without belt or drive pulley)..... on application

78F923—Price—Direct Connected "Bar-Nun" Grinder, with complete dust collector equipment on application

With all High-Speed Grinding Machinery the grinding parts doing the work will be subject to wear—the length of service depends entirely on the class of material ground and its ingredients. "Bar-Nun" Grinding Parts are made to give the maximum service—to obtain the best results, renew parts when dull.



NET PRICE LIST ON GRINDER REPAIRS

Weights given NOT boxed for shipment.

(B-10)	1 set corrugated top plates (4 to a set) with 4 long screws, 12 short screws, 16 nuts and 16 lock washers, weight 40 lbs.	\$11.00
(B-25)	1 set beaters complete (16 to a set) weight 36 lbs., set.....	\$30.00
(B-26)	1 set pins for beater arms (16 to a set) with 16 cotter pins, weight 5 lbs., set.....	7.50
	Screws, weight 5 lbs. each.	
	Size of Openings, 1/16, 5/32, 1/8, 7/32, 1/4, 9/32, 5/16, 3/8, 1/2, 13/32, 7/16, each.	1.25
(B-27)	1 set cross bars for holding screens (2 to a set) with 4 nuts, weight 5 lbs., set.....	4.75
(B-28)	Ball Bearings for mill, weight 5 lbs., each.....	14.40

(B-29) Ball Bearings for motor, weight 2 1/2 lbs. each. each \$9.00

FEEDER REPAIRS

Worm, H-12.....	\$7.75
Worm Gear, H-13.....	8.75
Sleeve Gear, H-14.....	5.75
Gear Pinion, H-15.....	5.50
Gear-27 T. 3/4" bore, H-16.....	6.75
Gear-27 T. 1" bore, H-17.....	6.75
Sprocket, large, H-24.....	4.50
Sprocket, small, H-25.....	4.00
Chain, H-23.....	2.75

BAB N Complete Description and Illustrations of the "Bar-Nun" found on pages 46 and 47.



"IDEAL" RAPID SACK PACKER

A GREAT FAVORITE BECAUSE OF ITS RAPID, EASY OPERATION
FRICTION CLUTCH TYPE



All control of mechanism operated with the foot. Both hands free to handle the sacks. Will handle all size sacks from 10 to 98 pounds. Sturdy construction.

Built to endure.

The "Ideal" Sack Packer is constructed for rapid and efficient packing of small sacks up to and including 98 pounds. It is friction drive, noiseless and made of the best materials and workmanship throughout. It is strongly braced and built to endure.

All the latest and best ideas of packer construction are incorporated in the "Ideal" Sack Packer.

It is rapid, very easy to operate, is absolutely dependable and cannot fail to please.

It is suitable for small or large mills or for plants that put up small package goods for the wholesale or retail trade.

THE CARRIAGE runs in a channel iron track on roller bearings inside of the posts, which greatly reduces the friction, allowing the packer to operate more freely and with less power.

A BALL BEARING THRUST COLLAR is on the auger shaft, which eliminates the wear and friction at this point.

In ordering always state the number and size of tubes wanted (one size furnished with the packer, others are extra); give size of sack laid flat, stating length and width. See list of standard size flour sacks below. Also state whether drive pulley is to be on left or right side when facing the packer, and whether the augers run with or against the sun. See diagram below for instructions in specifying packer drives.

STANDARD SIZES OF FLOUR SACKS, LAID FLAT

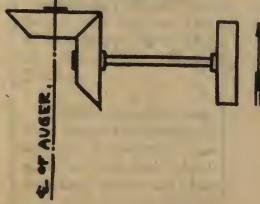
	Height	Width	Height	Width
5-pound.....	14½ x	7½ in.	12-pound, tied.....	20½ x 10½ in.
6-pound.....	14½ x	9 in.	19-pound.....	25½ x 11 in.
8-pound.....	17½ x	9½ in.	24-pound, tied.....	25½ x 13 in.
10-pound, sewed.....	17½ x	10 in.	48-pound, sewed.....	29½ x 16½ in.
10-pound, tied.....	18½ x	10½ in.	48-pound, tied.....	31½ x 16½ in.
12-pound, sewed.....	19½ x	10½ in.	98-pound, sewed.....	35½ x 20½ in.
12-pound, tied.....	19½ x	10½ in.	98-pound, tied.....	35½ x 21 in.

DIMENSIONS AND PRICES OF "IDEAL" SACK PACKERS

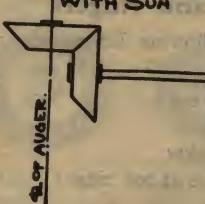
Height, over all.....	7 ft. 4 in.	Width of frame, 1 ft. 10 in.	Size of Hopper,	Bore-Bot'm Auger 1¼ in.
Width, over all.....	3 ft. 6 in.	Height to center of	inside.....	Speed .150 to 200 R.P.M.
Depth, over all.....	2 ft. 0 in.	shaft.....	15x10 in.	Size of Pulley...16x4 in.
		6 ft. 9 in.	Mitre Gears ...21 Teeth	Weight.....600 lbs.
			Bore—Top Auger, 1½ in.	

78F890 "Ideal" Sack Packer. Complete with Tube for packing one size of sack. \$190.00
 78F892 Extra for 4 Dial Automatic Counter, attached. 7.75
 78F894 Extra for 5 Dial Automatic Counter, attached. 8.75
 78F896 Extra Set of Tubes and Augers, any size, each 12.75

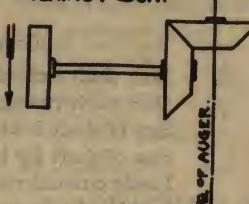
No. 1. RIGHT HAND
AGAINST SUN



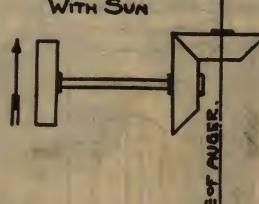
No. 2. RIGHT HAND
WITH SUN



No. 3. LEFT HAND
AGAINST SUN.



No. 4. LEFT HAND
WITH SUN



Instructions for Specifying Kind of Drives Desired on Packers

In ordering, give size of sack, laid flat on the floor, stating width and length. Also state whether the driving shaft is to be on the right or left hand side as you face the packer, and if the augers are to run with or against the sun. See diagrams. Order by diagram.

“STANDARD” FLOUR PACKERS



Drop Gear Drive

Drop Gear and Friction Clutch Types

**Heavy Frames, Securely Braced, Insure Strength.
Roller Bearings on Carriage Prevent Binding.
Ball Bearing Thrust on Auger Shaft.**

Our “Standard” Flour Packers are suitable for packing any size sacks or barrels above 12½ pounds. They are very easy to operate. They are built heavy and strong, and are securely braced to withstand hard usage and pressure. The frames are heavy and securely fastened with mortised and tenoned joints bolted together. The dependability built into “Standard” Flour Packers make them favorites with the trade.

The CLUTCH used in the friction drive packer is of the positive type and is very powerful, compact and durable.

The STANDARD FRICTION DRIVE PACKERS ARE EQUIPPED WITH A BALL BEARING THRUST COLLAR, placed ahead of the shifter collar, which eliminates the wear and friction at this point.

The AUGER SHAFT on each packer is equipped with A BALL BEARING THRUST.

The CARRIAGES on all our packers run in a channel iron track on roller bearings inside the posts, which greatly reduces the friction, allowing the packer to operate more freely and with less power.

In ordering packers, state how many different size augers and tubes are wanted (one size furnished with packer, others are extra); also state the size of the sacks when laid flat on the floor, giving width and length. For standard sizes of sacks see information on page 49.

Also state whether drive pulley is to be right hand or left hand when standing in front of and facing the packer, and also whether the augers are to run with or against the sun. For drive information in ordering packers see page 49.

The dimensions of both the drop gear and friction drive packer are the same except where otherwise noted.

**“Standard” Flour Packers
Combine Strength, Easy Operation
and Efficiency
This is Why They Are Favorites.**

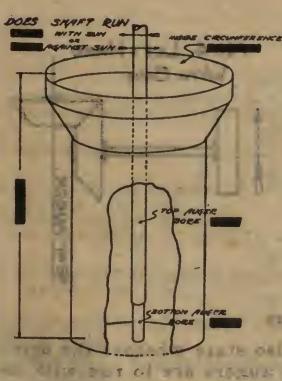


Friction Drive

DIMENSIONS AND PRICES OF DROP GEAR AND FRICTION DRIVE PACKERS

Extreme height.....	8 ft. 11½ in.
Extreme width of drop gear packer, not including pulley.....	3 ft. 6 in.
Extreme width of friction drive packer, including pulley.....	4 ft. 2 in.
Bevel gear on upright shaft.....	31 cogs
Pinion on countershaft.....	23 cogs
Height of frame, friction clutch packer.....	8 ft. 10 in.
Height of frame, drop gear packer.....	8 ft. 10 in.
From floor to center of drive shaft, friction clutch packer.....	7 ft. 11 in.
From floor to center of drive shaft, drop gear packer.....	7 ft. 11 in.
Diameter of packing shaft.....	1 ½"
Size of pulley.....	20" x 6"
Speed of drive shaft, friction clutch packer.....	175 R. P. M.
Speed of drive shaft, drop gear packer.....	150 R. P. M.
Size of top opening.....	22½" x 16"
Weight of friction clutch packer.....	925 lbs.
Weight of drop gear packer.....	830 lbs.
78F910 Drop Gear Packer (with one size tube and auger only.) Price.....	\$190.00
78F912 Friction Drive Packer (with one size tube and auger only.) Price.....	235.00
78F914 Extra tubes and augers, per set.....	12.75

Be sure to give all information requested when ordering.



Be Sure to Give Us This Information in Ordering Packer Tubes and Augers

Give the Following Information:

- Does shaft run with the sun?
- Does shaft run against the sun?
- Size of shaft for top Auger.
- Size of shaft for bottom Auger.
- Inside circumference of tube at top ring.
- Length of tube over all.
- Size of bag laid flat, viz., length and width.
- Kind of material to be packed.
- Make of Packer.

See Page 51 for Prices on Packer Gears, Tubes and Augers.

"IDEAL" BRAN AND FEED PACKERS

Drop Gear and Friction Clutch Types

Built To Stand Up Under Most Severe Service.
Roller Bearings on Carriage Prevent Binding.
Ball Bearing Thrust on Auger Shaft.

"Ideal" Bran and Feed Packers are constructed for strength and durability, and they will stand up and give the best satisfaction under the heavy strain of bran and feed packing.

They are so designed that they make the work light and rapid for the operator.

The FRAME is strongly built with heavy hardwood posts and the joints mortised and tenoned and bolted together. On the friction clutch packer a heavy reinforced cast iron front is bolted to the wood frame, supporting the shafting.

The CARRIAGE runs in a channel iron track on roller bearings inside the post which greatly reduces the friction, allowing the packer to operate more freely and with less power.

Our "IDEAL" FRICTION CLUTCH BRAN AND FEED PACKERS are equipped with a ball bearing thrust collar placed ahead of the shifter collar, which eliminates the wear and friction at this point.

The AUGER SHAFT is equipped with a Ball Bearing Thrust.

The FRICTION CLUTCH on the Friction Clutch Packer is of the positive type. It is heavy and durable.

The PACKERS are made regular for packing standard feed sacks.

The standard size for 100 lbs. is 50" burlap, which is a sack which measures 24" across by 40" to 42" long when laid flat on the floor. We make tubes, augers and supporting cases for any size sack (one size furnished with packer, others are extra.) In ordering give size of sack lying flat on floor, stating length and width. Also state whether the drive pulley is to be on the right or left hand side of the packer when standing in front of and facing the packer. Also whether the auger is to run with the sun or against the sun. (See page 49 for information on packer drives.)

Dimensions of friction drive and drop gear drive packers are the same except where otherwise noted.

Friction Drive

"Ideal" Packers are Durable and Dependable

DIMENSIONS AND PRICES OF IDEAL FRICTION DRIVE AND DROP GEAR FEED AND BRAN PACKERS

Extreme height.....	8 ft. 11 1/4 in.
Extreme width of drop gear packer, not including pulley.....	3 ft. 6 in.
Extreme width of friction drive packer, including pulley.....	4 ft. 2 in.
Bevel gear on upright shaft.....	31 cogs
Pinion on countershaft.....	23 cogs
Height of frame, friction clutch packer.....	8 ft. 10 in.
Height of frame, drop gear packer.....	8 ft. 10 in.
From floor to center of drive shaft, friction clutch packer.....	7 ft 11 in.
From floor to center of drive shaft, drop gear packer.....	7 ft. 11 in.
Diameter of packing shaft.....	1 1/2 in.
Size of pulley, friction drive.....	26x7 in.
Size of pulley, drop gear.....	24x6 1/2 in.
Speed of drive shaft, friction clutch packer.....	200 R. P. M.
Speed of drive shaft, drop gear packer.....	150 R. P. M.
Size of top opening.....	22 1/2" x 16"
Weight of friction clutch packer.....	965 lbs.
Weight of drop gear packer.....	870 lbs.
 78F900 Drop Gear Packer (with one size tube and auger and enclosing case). Price.....	\$235.00
 78F902 Friction Drive Packer (with one size tube and auger enclosing case). Price.....	320.00
 78F904 Extra tubes and augers, per set.....	12.75
 78F906 Extra enclosing cases, each.....	29.75

Be sure to give all information requested when ordering.

We can furnish repairs and extras for almost every make of Flour or Bran Packer.

When ordering, advise us of the kind of repair required, or give a detailed description of same; also the name and make of packer. Also state whether right or left hand, size of shaft, etc.

BEVEL GEARS



For Drop Gear, Silver Creek, Eureka, Allis, Invincible and Monarch Flour Packers. Gear—31 cogs; Pinion—23 cogs.

Price, per pair, net... \$15.00

PACKER AUGERS (Right and Left Hand)

For Flour Packers
1 bbl., net, each... \$6.00
1/2 bbl., net, each... 5.40
1/4 bbl., net, each... 4.80
1/8 bbl., net, each... 4.20
Knives..... 2.40

For Bran Packers
100 lb. Sacks \$8.75
200 lb. Sacks 9.50

Drop Gear Drive

(Right and Left Hand)



PACKER TUBES

Net Each
All Sizes for Flour or Bran Packers.... \$ 8.40
Enclosing Cases for 100 and 200 lb. Bran Sacks..... \$29.75



"Bull Dog" Bag Holders and Bag Fillers

"BULL DOG" BAG HOLDERS



Patent (Reg. U. S. Pat. Office.)

Fig. 1702.

Regular
Stationary
Type



Special
Swivel
Type

Save Your Time, Money, Hands, Arms and Your Clothing, by Using "BULLDOG" Bag Holders on Your Bagging Spouts.

WILL NOT TEAR THE BAGS—NEVER LETS GO!

The "BULL DOG" Bag Holder has no protruding sharp points (such as nails, hooks, pins, etc., as generally used) to lacerate the operator's hands, arms and fingers and to tear his clothing. It has no protruding points to hold the bag to the spouts, which tend to tear the sack when it begins to fill.

The operator can attach a bag to a spout equipped with a "BULL DOG" Bag holder quicker and easier than by any other device or bag holder that has ever been devised. The regular stationary "BULL DOG" Bag holder consists of four corner irons, a holding mechanism which contains a knurled holding mechanism on an eccentric that compresses the bag attached against a steel coil spring, and a set of screws for fastening to spouts.

All parts are made of cast iron or cold rolled steel. Can be applied to your spouts in less than five minutes by any one. For any size spout 8 inches or over.

The special swivel "Bull Dog" Bag Holder shown on the right has the same holding mechanism as the regular "Bull Dog" described above, but it is equipped with a cast iron frame so that the handle may be turned in any position. It is also fitted with a steel slide and when the bag is full the slide may be closed and cut off the supply of grain. A flange all around the rim of the iron frame takes the place of the four corner irons on the regular type.

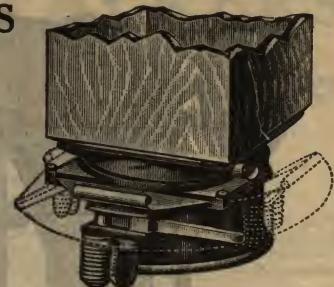
The swivel type "Bull Dog" is recommended for places where it is necessary that the bags may be put on or taken off from any side of spout. THE "BULL DOG" NEVER FAILS. READ THE LETTER IN THE LOWER RIGHT HAND CORNER OF THIS PAGE. THE "BULL DOG" WILL BE SURE TO PLEASE YOU TOO.

78E1702 Regular Stationary Type, for attaching to wood spouts. Price net, each

\$ 2.95

78E1703 Special Swivel Type. Price net, each

11.75



WITH FEED SLIDE
(Pat. Reg. U. S. Pat. Off.)
Fig. 1703.



(Pat. Reg. U. S. A.)
Fig. 1705.

"BULL DOG" BAG FILLER

Will Keep From One to Five Men Busy.

Will Handle all Kinds of Grain, Flour, Sweepings, Potatoes, Onions, Etc. One of These Fillers Should Be on Every Floor of the Mill, to Handle Sweepings, Choke-Ups, Etc.

Swivel "BULLDOG" Bag Holder Enables Bags to Be Attached From Front or Back.

The "BULL DOG" Bag Filler meets a great need for filling bags from cars, bins or removing sweepings, choke ups, etc. It will handle any kind of grain or flour, shelled corn, potatoes, apples, etc.—in fact, it will handle practically everything except ear corn or baled hay. It will keep from one to five men busy. With it one man can fill bags faster and with less effort than two men can when one is required to hold the bag. With one man to attach the empty and remove the filled bags, they may be filled as fast as two men can shovel. Fitted with reversible hopper cover allowing it to be filled from either side.

The "BULL DOG" is made entirely of metal except for the wood platform. It has a large steel hopper, which is easy to scoop into and it is equipped with a swivel "BULL DOG" Bag Holder with a steel slide as shown in the illustration. This enables from one to five men to operate the device, as the bag holder, being on a swivel may be turned with the lever in the front, so that one man can attach, fill and remove the bags from the front—but, when two or more men are working together, one man may attach and remove the bags from the back. The slide in the holder enables him to put on and take off the bags without interfering with those shoveling and they may proceed without stopping.



The bags may be put on or taken off in an instant—no nails or hooks to catch and tear the bags or clothing, and once attached the "BULL DOG" never lets go until the lever releases the bag.

Heavy angle steel legs adjustable to any size grain bags. Equipped with four wheels for easy moving.

78E1705 "BULL DOG" Bag Filler, complete as illustrated. Price, net

\$35.00

Showing One Man removing the Filled Bags and Putting on the Empty Bags, While Two Men Fill Them.

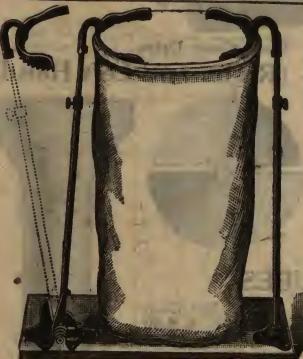


Fig. 1704

"Mosher" Bag Holders

Adapted to all sizes of bags, from a 48-lb. flour sack to a 6-bushel gunny bag. Does not tear the bag. It is well made; malleable iron jaws, wrought iron pipe standards, steel spring, and weighs only 20 lbs. It pays for itself in a month's time.

78E1704. Price, Mosher Bag Holder, each, only.....\$4.75

The "BULLDOG" Always Pleases

Sheboygan Falls, Wisconsin.

Oct. 30, 1919.

B. F. GUMP CO.,

431 So. Clinton St., Chicago, Ill.

Dear Sir:

Will you please send us at once, by parcel post, one "BULL DOG" Bag Holder. This makes the tenth of the bag holders we have in use here and the fact that we keep on ordering them ought to be sufficient indication of what we think of them.

Very truly yours,

E. GONZUEBACH,

Falls Roller Mills Co

Bag Closing Machines, Bag Fillers, Etc.

"HOEPNER" BAG CLOSING MACHINE

Handles Any Size Bag From The Smallest to The Largest Size.
Has Fewer Parts and Every Working Part of the Sewing Machine is Easily Accessible to the Operator.

Table Swings on Ball-Bearings. Bags May Be Resewed Without Lifting.
All Parts Heavy and Strong --- GUARANTEED FULLY.

We believe the HOEPNER Bag Closing Machine to be the best machine of its kind on the market. It is built as heavy and as strong as a machine of its kind reasonably can be, and it has as few parts as such a machine can have.

Every working part is easily accessible to the operator. The material used is the very highest grade and the workmanship is unexcelled.

The simplicity, strength, durability and efficiency of this machine has made it a favorite with those who use it.

The HOEPNER will close filled bags of any size from the largest to the smallest. A small adjustable platform is used for the small sacks, while a large adjustable platform is used for the larger bags. A feature of the machine is that both the bag platform and sewing head are adjustable so heavy short sacks may be closed and the platform remain close to the floor to save lifting.

The bag supporting platform rests on ball bearings, and swings forward and backward past the sewing machine without friction.

SEWING THE BAG. When the bag is in position on the platform and the starting foot lever is pressed down it disengages the lock on the platform, raises the counterweight and engages the coil spring opposite and swings the platform forward. The sewing machine then starts. The entire operation is regulated by the foot lever and the operator controls the entire machine with his foot.

A STRONG FEATURE OF THE "HOEPNER" is that, if for any reason whatever the bag must be returned to the starting point the foot pressure may be raised and the machine will stop and the bag swing back to the original starting point. The bag need not be lifted at all as is the case with a machine using a belt carrier. This is a most desirable feature—if the thread should break while closing the bag or where material is being enclosed in two bags, one within the other, which must be closed separately.

Furnished complete with a $\frac{1}{6}$ H. P. motor. In ordering be sure to state whether motor is for A. C.

78F1711. HOEPNER Filled Bag Closing Machine, complete with $\frac{1}{6}$ H. P. motor. Price, each. \$423.50



"IDEAL" ELEVATOR AND BAGGER

Furnished With Ball-Bearing Elevator
Equipped With or Without "BULLDOG" Bag Holders.



When Equipped with "BULL-DOG" Bag Holders as Shown in The Illustration — This Makes the Most Efficient Elevator and Bagger on the Market. Ball-Bearing Elevator Insures Light Running.

1—Gump's ball-bearing elevator with 5×4 cups and steel hopper; $1\frac{1}{2}$ -inch $\times 10$ ft. steel conveyor; 4 spouts with cut-off slides and regular "BULL-DOG" Bag Holders completed with pulley and conveyor drive as shown in the illustration. Size of drive pulley 12×4 . Speed of drive pulley 115 R. P. M.

78E1744. Price net with Bag Hooks. \$135.00

78E1745. Price net with "BULL-DOG" Bag Holders. 145.00

We can furnish any size elevator and bag filler to meet all requirements. Mention height of elevator and length of conveyor when writing and capacity required. Prices on application.



"SOPHER" STREAM SPLITTER

The Perfect Division of Stream Prevents Over-loads, eliminates Choke-Ups, Increases Capacity.

Evenly divides the stream from an elevator or spout and delivers it to two separate sections of a sifter. The mechanism is such that regardless of which side of the spout the stream is delivered from, it will be evenly divided. A movable splitter separates the stream so that regardless of how much or how little is fed at a time the division of the stream will be even. Speed 70 to 100 R. P. M. Size pulley, $4 \times 1\frac{1}{4}$.

	Outside measure for Spouts	Price Each
78E1632	$5\frac{1}{2} \times 1\frac{1}{8}$	\$ 12.00
78E1633	$6 \times 1\frac{1}{8}$	12.50
78E1634	$6 \times 1\frac{1}{8}$	13.25
78E1635	$7 \times 1\frac{1}{2}$	14.00
78E1636	$7 \times 1\frac{1}{2}$	14.50
78E1637	$8 \times 1\frac{1}{4}$	15.00
78E1638	$10 \times 0\frac{1}{8}$	16.00

Larger or Smaller Sizes Furnished—Prices on Application.

Hand Bag Filler



The illustration shows a simple and convenient device for rapidly filling bags by hand. It takes up little room, and prevents flour and like material from wasting. If the bin is deep, not more than 18 inches of the length of the conveyor should be subject to the direct pressure of the contents of bin, for the weight will cause the conveyor to turn harder than is desirable.

It is well built, handsomely finished and durable.

78E1700 NET PRICES

Packer, complete as shown in cut. \$22.50

Conveyor and Handle only. 16.75

MAGNETIC SEPARATORS, MOTION INDICATORS, ETC.

"IDEAL" AUTOMATIC MAGNETIC SEPARATOR



"A Constant Watch Dog on the Rolls"

Always on the job to stop and remove any iron particles, such as nails, bolts, iron ore, pieces of wire or other metallic particles from the grain, preventing them from passing thru the rolls or grinding machinery, without in any way interfering with the steady flow of the grain. All the metal particles are caught and held on the magnetic field directly in the path of the adjustable wiper, which removes them. Made in thirteen sizes.

78F930

Sizes and Net Prices

No.	Size Pulley	Rev. per Min.	Capacity per Hour Bushels	Weight Lbs.	Length Hopper Inside	Net Price
1	6x2	15	35	150	11"	\$ 70.00
2	6x2	15	50	170	15"	85.00
3	6x2	20	80	200	21"	95.00
4	7x3	20	110	250	27"	115.00
5	7x3	20	140	275	33"	145.00
6	7x3	20	180	300	39"	165.75
7	7x3	25	225	350	45"	191.25
8	7x3	25	280	400	51"	238.00
9	8x3	25	340	450	57"	284.75
10	8x3	25	400	525	63"	357.00
11	8x3	25	475	600	69"	416.50
12	8x3	25	525	650	75"	476.00
13	9x5	25	600	700	81"	535.50

INVINCIBLE SYPER AUTOMATIC ELECTRO MAGNETIC SEPARATOR

This is the latest form of magnetic separator. It requires a direct electric current, taken either from a lighting line or produced by a separate dynamo.

The magnetic strength of the field is much greater than that of a permanent magnet, having a retaining force of at least 500 lbs. which never deteriorates.

A special wiper, designed especially for a field of this strength thoroughly cleans the field. Current consumption is small, ranging from $\frac{1}{2}$ to 2 amperes, regularly wound for 110 volts, but will furnish for any voltage ordered. Guaranteed to remove metal where other machines fail.

Always state voltage wanted when ordering.

78F931

Sizes and Net Prices



F. O. B. Factory

No.	Space Occupied	Size Pulley	Length Hopper Inside	Speed R. P. M.	Capacity Bushels per Hour	Shipping Weight	Net Price	Net Price Dynamo Extra	Net Price Magnet with Cleaner Only
1	24" x 24" x 26"	6x2"	13"	15	30 to 40	100 lbs.	\$143.00	\$ 65.00	\$104.00
2	26" x 24" x 26"	6x2"	15"	15	40 to 55	115 lbs.	149.50	65.00	110.50
3	28" x 24" x 26"	6x2"	17"	15	55 to 70	130 lbs.	158.60	65.00	120.90
4	30" x 24" x 26"	6x2"	19"	20	70 to 85	145 lbs.	169.00	65.00	130.00
5	32" x 24" x 26"	6x2"	21"	20	85 to 100	160 lbs.	178.00	65.00	139.00
6	34" x 24" x 26"	6x2"	23"	20	100 to 115	175 lbs.	188.50	65.00	149.50
7	36" x 24" x 26"	6x2"	25"	20	115 to 130	190 lbs.	195.00	65.00	156.00
8	38" x 24" x 26"	6x2"	27"	20	130 to 145	205 lbs.	201.50	84.50	162.50
9	42" x 24" x 26"	6x3"	29"	20	145 to 175	225 lbs.	221.00	84.50	182.00
10	48" x 24" x 26"	6x3"	31"	20	175 to 220	250 lbs.	253.50	130.00	195.00

Other sizes furnished. Prices on application.

HORSE SHOE MAGNETS, SINGLE



For removing wire and pieces of iron or steel of all kinds from grain before grinding.

Magnets should be placed not more than one inch from side to side, and at least two gangs should be used; if the spout is very steep three gangs will be needed. When not in use the "keepers" should be placed on the magnets.

Length, 10 inches.

Weight, 2 to $2\frac{1}{2}$ pounds.

78E932 Net Price.

Single Magnets, each... \$0.85

GRAHAM MOTION INDICATOR

STOPS GUESSING

The speed can fool the operator but it can't fool the Graham.

Designed for the use of Flour and Grist Mills, and all Machinery where a certain and uniform motion is necessary.

The Graham Motion Indicator is intended to show the operators in a mill or factory when the shafting is running at proper speed, and if any changes occur, to give an alarm by ringing a bell.

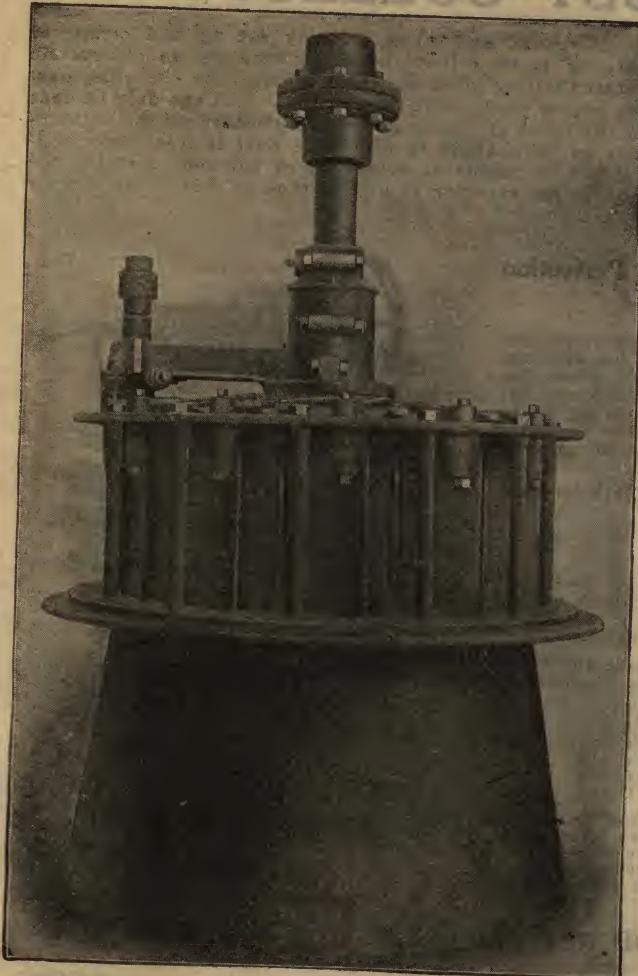
It is a simple device, and can be driven from either a horizontal or vertical shaft. The Graham Motion Indicator should be speeded from 100 to 110 R. P. M. Drive Pulley is 3 inches diameter, unless otherwise ordered. Weight about 25 pounds.

78E430 Net Price, each.....



\$19.50

"SAMSON" TURBINE WATER WHEELS



The Most Powerful Turbine Built

The strongest and most thoroughly commercial turbine made.

This turbine when properly installed and operated will use the water at the highest economical efficiencies at all gateages. The high speed of these turbines means a reduction in the cost of the power transmission machinery and a consequent saving in horsepower, on account of the smaller dimensions and weight of the power transmission machinery, due to the high speed of the turbine.

All parts of these turbines are built strong and substantial, with liberal wearing surfaces, and of the very best material and workmanship. All parts can be quickly and accurately duplicated for repairs and alterations, as jigs and templets of standard dimensions are used in building these turbines, which insures a minimum loss of time should a turbine be shut down for repairs.

The Turbine Runners are cast solid with the best quality of open hearth flange steel buckets, which means that the buckets are not easily broken, and will stand more severe usage than buckets made of cast iron.

The turbine shafts are of the best quality of hammered open hearth steel. The gate bolts and gate connections are of open hearth steel and the step bearings are of large dimensions and made of West India lignum-Vitae.

These turbines are fitted with improved water-balanced gates, which means if a governor is used for regulating the speed of these turbines under different changes of load, that the speed of these turbines will be more nearly normal than any other turbine running under the same conditions.

All turbines absolutely guaranteed first class in every respect.

All turbines are built and furnished to rotate with the sun, unless otherwise ordered. We also furnish complete power connections for these turbines when ordered, including extension shafts, bearings, gears, bridge trees, beams, pulleys, etc. We do not include any of these power connections in the prices below. We will quote special prices on connections upon receipt of complete information as to how the power connections must be arranged to suit your conditions.

We also can furnish special wheels to meet special conditions.

78F936—Power—Horsepower. Water—Cu. ft. used per min. Speed—Rev. per Min. Prices—f. o. b. Factory.

SIZE of Turbine	17B			17A			20			23			26			30			35			SIZE of Turbine
HEAD	Power	Water	Speed	Power	Water	Speed	Power	Water	Speed	Power	Water	Speed	Power	Water	Speed	Power	Water	Speed	Power	Water	Speed	HEAD
6	7.0	754	228	9.1	986	228	11.9	1293	199	15.7	1710	173	2185	153	26.7	2909	132	36.2	3944	114	6	
8	10.6	871	264	13.9	1139	264	18.3	1493	230	24.2	1974	200	30.9	2523	177	41.1	3359	153	55.7	4554	132	8
9	12.7	924	280	16.0	1208	280	21.8	1583	244	28.8	2094	211	36.8	2676	188	49.1	3563	163	66.5	4830	140	9
10	14.9	975	294	19.5	1275	294	25.5	1669	257	33.8	2207	224	43.2	2821	193	57.5	3756	171	77.9	5091	147	10
11	17.2	1021	308	22.5	1325	308	29.5	1750	270	39.0	2315	235	49.8	2959	207	66.3	3939	180	89.8	5339	154	11
12	19.5	1066	322	25.5	1394	322	33.6	1828	282	44.4	2418	245	56.7	3090	217	75.5	4114	188	102	5577	161	12
14	24.7	1153	348	32.3	1506	348	42.3	1975	304	55.9	2612	265	71.5	3338	234	95.2	4444	203	129	6024	174	14
16	30.2	1232	372	39.5	1610	372	51.5	2111	325	68.3	2792	283	87.3	3569	250	116	4751	217	158	6440	186	16
18	36.0	1307	394	47.0	1708	394	61.7	2239	345	81.6	2961	300	104	3785	265	139	5039	230	183	6831	197	18
20	42.1	1377	416	55.0	1800	416	72.2	2360	364	95.5	3122	316	121	3919	280						20	
NET PRICE	\$420.00			\$440.00			\$465.00			\$550.00			\$630.00			\$770.00			\$950.00			NET PRICE

SIZE of Turbine	40			45			50			56			62			68			74			SIZE of Turbine
HEAD	Power	Water	Speed	Power	Water	Speed	Power	Water	Speed	Power	Water	Speed	Power	Water	Speed	Power	Water	Speed	Power	Water	Speed	HEAD
4	25.8	4223	81	32.7	5344	72	40.5	6598	65	50.6	8277	58	62.1	10146	52	74.7	12204	48	88.5	14453	44	4
6	47.5	5172	100	60.1	6546	88	74.2	8081	80	93	10137	71	114	12426	64	137	14947	59	162	17701	54	6
7	59.8	5587	108	75.7	7070	96	93.5	8729	86	117	10950	77	144	13419	69	171	16145	63	205	19120	58	7
8	73.1	5972	115	92.5	7558	102	114	9331	92	143	11705	82	176	14349	74	211	17258	68	250	20439	62	8
9	87.2	6335	122	110	8017	109	136	9897	98	171	12415	87	210	15219	79	252	18306	72	299	21679	66	9
10	102	6677	129	129	8450	114	160	10433	103	200	13087	92	245	16042	83	295	19297	76	350	22852	70	10
12	134	7315	141	170	9257	125	210	11429	113	263	14336	101	323	17574	91	388	21139	83	460	25034	76	12
NET PRICE	\$1200.00			\$1535.00			\$1950.00			\$2425.00			\$2900.00			\$3875.00			\$4750.00			NET PRICE

PERFECTION DUST COLLECTORS

The construction of the Perfection Collector is very simple, and when properly set up and connected requires no attention. The general design of this collector is such that the air encounters no obstruction after passing through the cloth. It is a well known fact that the cloth used in a machine for collecting dust must be kept absolutely clean all the time to insure the proper working of the machine. This can only be done by means of a reverse current of air or back draft on the tubes at the time they are discharging the accumulated dust. The life of the cloth in a collector depends on the manner in which the dust is freed from contact with the cloth, and in the Perfection is accomplished by means of rubber faced hammers striking the maple cross piece to which the tubes are attached, and is far superior to any method in which the cleaner comes in direct contact with the cloth.

General Directions for Selecting Proper Size Perfection Collectors for Different Machines

Receiving Separators—For Double Separation Separators, figure 3 feet of Collector Cloth for each square inch of fan opening, and for Single Separation Separators figure 2½ feet. Receiving Separator Fans should not blow directly into the Collector, but into a settling chamber, to avoid cutting out of cloth by sharp particles taken out by Fan. Where it is not possible to use a settling chamber, screens can be put in wind trunk to prevent sharp stock from entering Collector.

Milling Separators—Figure 2½ feet of Collector Cloth for each square inch of fan opening.

Scourers—Figure 3 feet of Collector Cloth for each square inch of fan opening.

Purifiers—Figure not less than 7 feet of collector cloth for each square foot of sieve surface. Should the middlings not be well dusted it will be necessary to take the Collector a size larger than what the above rules figure, to get good satisfaction.

Roll Suction—Figure the number of feet of Collector Cloth given in table below for each double stand or 4-roller machine:

6 x 12,	6 x 15,	6 x 16.....	25 feet Collector Cloth
6 x 18,	6 x 20.....	28 feet Collector Cloth	
6 x 24,	9 x 14.....	30 feet Collector Cloth	
9 x 18,	9 x 24.....	40 feet Collector Cloth	
9 x 30,	10 x 30.....	45 feet Collector Cloth	
10 x 36		50 feet Collector Cloth	

We would strongly urge the advisability of using Collectors having as a minimum the number of feet of cloth as figured out according to above directions. If in doubt as to the size of Collector to use for a certain purpose, we will, upon receiving information regarding size and speed of fan, size of fan opening and class of stock to be handled, immediately advise.

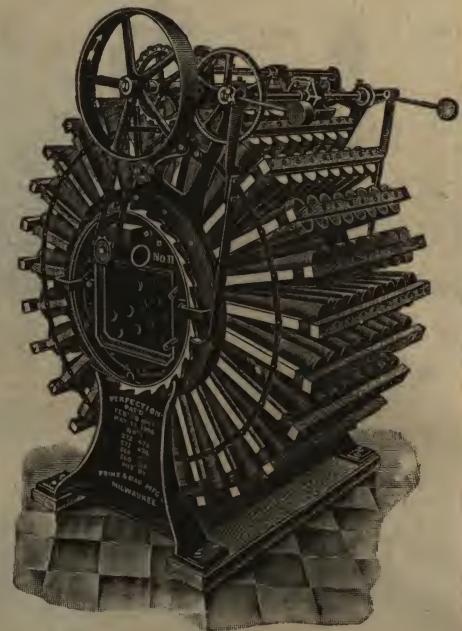
78F938

SIZES, DIMENSIONS AND NET PRICES—F. O. B. FACTORY

Size	Net Price	No. of Tubes	Size of Inlet	Size Over All			Feet of Cloth	Approximate Shipping Weight
				Height	Diameter	Length		
1	\$138.75	184	7 ¾ x 12 ¾ in.	4 ft. 11 in.	4 ft. 1 in.	4 ft. 3 in.	130.5	750 lbs.
2	157.25	230	7 ¾ x 12 ¾	4	11	4	163	850
3	175.75	276	7 ¾ x 12 ¾	4	11	4	195.5	950
4	194.25	322	7 ¾ x 12 ¾	4	11	4	228	1050
5	212.75	368	7 ¾ x 12 ¾	4	11	6	260.5	1150
11	175.75	208	11 x 14 in.	5 ft. 11 in.	5 ft. 0 in.	4 ft. 3 in.	192	1000 lbs.
12	197.95	260	11 x 14	5	11	4	240	1100
13	220.15	312	11 x 14	5	11	5	288	1200
14	242.35	364	11 x 14	5	11	5	336	1300
15	264.55	416	11 x 14	5	11	6	384	1400
21	222.00	288	18 ½ x 18 ½ in.	6 ft. 8 in.	5 ft. 8 in.	4 ft. 3 in.	265	1300 lbs.
22	249.75	360	18 ½ x 18 ½	6	8	4	332	1400
23	277.50	432	18 ½ x 18 ½	6	8	5	399	1500
24	305.25	504	18 ½ x 18 ½	6	8	5	466	1600
25	333.00	576	18 ½ x 18 ½	6	8	6	533	1700
31	266.40	288	18 ½ x 18 ½ in.	7 ft. 8 in.	6 ft. 8 in.	4 ft. 3 in.	370	1350 lbs.
32	299.70	360	18 ½ x 18 ½	7	8	4	462	1450
33	333.00	432	18 ½ x 18 ½	7	8	5	554	1600
34	366.30	504	18 ½ x 18 ½	7	8	5	646	1750
35	399.60	576	18 ½ x 18 ½	7	8	6	738	1850
36	432.90	648	19 ¾ x 17 ¼ in.	7 ft. 8 in.	6 ft. 8 in.	7 ft. 4 ½ in.	832	2150 lbs.
37	466.20	720	19 ¾ x 17 ¼	7	8	7	926	2250
38	499.50	792	19 ¾ x 17 ¼	7	8	8	1020	2350
39	532.80	864	19 ¾ x 17 ¼	7	8	8	1114	2450
41	666.00	1008	19 ¾ x 17 ¼ in.	7 ft. 8 in.	6 ft. 8 in.	9 ft. 11 ¼ in.	1282	3000 lbs.
42	795.50	1152	19 ¾ x 17 ¼	7	8	10	1476	3200

DUST COLLECTOR TUBES AND SIFTER STOCKINGS

We can make to size all kinds of Dust Collector Tubes or Sifter Stockings in any sizes, of heavy or light material. Write for prices, stating size of tubes.



Perfection Dust Collector

"NIAGARA" DUST COLLECTORS

The machine consists of a series of cloth tubes arranged in a circle, surrounded by an outside casing of galvanized iron. It is virtually two machines in one, as it performs the work of both the cyclone type and all cloth tube dust collectors.

All heavy and coarse material is collected by the outer casing, and deposited into the lower conveyors, while the lighter particles enter the cloth tubes, which discharge into the upper conveyor. On most stock fully sixty per cent of that blown into the collector, settles in the bottom and in some cases a great deal more. By not allowing the coarse stock to enter the tubes, the cloth is relieved from a great deal of extra work, and consequently wears much longer than in collectors where all of the dust is carried into tubes.

Hundreds of these machines are in daily operation on almost every kind of dust and in some installations the whole product of grinding and shredding machines is blown directly into the collector. The larger machines handling from seven to nine thousand pounds per hour.

OPERATION

The dust laden air enters the machine at the top of the casing, through an opening the full length, and passes into the circular space surrounding the cloth tubes. This long opening and circular space allows the air to expand and diminishes the force of the current. This action causes a large portion of the dust and all heavy particles to drop to the bottom conveyors, while the air and fine dust enter the slowly revolving drum of cloth tubes at their large end. When each row of tubes is directly over the dead air chamber, the tubes are collapsed by a reverse air current connected to the eye of a fan. The dust is loosened from the tubes by a number of rappings from iron hammers and falls into the upper conveyor. During this operation the small or closed ends of the tubes are on top so that there is nothing to interfere with the dust dropping out after it has been loosened.

SPECIFICATIONS

Always specify what stock the collector is to handle. Just as good results can be obtained by blowing two or three fans into one collector with sufficient cloth surface.

When so ordered we build all sizes to hang from the ceiling.

As it is not convenient to drive the collector directly from a fast running shaft we furnish at additional cost a countershaft attached to the collector. This countershaft can be placed at any point on the side of the machine and the driving pulley can be placed at either end. We also furnish at additional cost a bevel gear drive which permits the machine to be placed at right angles to driving shaft.

SPEED—24 R. P. M. on All Sizes Drive Pulleys—Nos. 13 to 27— $18 \times 2\frac{1}{2}$. Nos. 31 to 46— $18 \times 3\frac{1}{2}$. F. O. B. Factory

78F939

SIZES, DIMENSIONS AND NET PRICES.

The discharge and drive can be placed on either end of machine but unless otherwise ordered machine will be built as shown in the illustration.

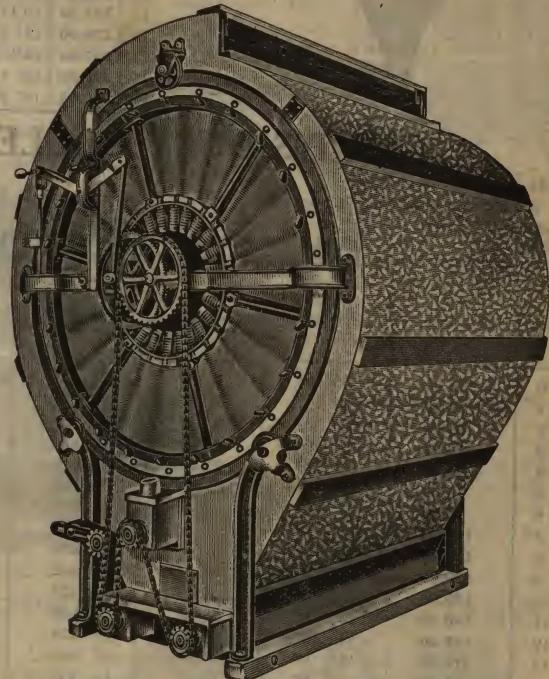
GENERAL DIRECTIONS

To determine the proper size Niagara Dust Collector required the number of square feet of cloth for each square inch of fan opening as follows:

Receiving Separators, Scourers and Corn Cleaners, $3\frac{1}{2}$ square feet of cloth. Milling Separators, 3 square feet of cloth. Oat Clippers $4\frac{1}{2}$ square feet of cloth. Purifiers, 10 square feet of cloth for each square foot of sieve surface.

The preceding table applies to cleaners and purifiers running up to their normal or indicated speed. When special blowers are used we should be advised as to the speed of fan and size of discharge.

For number of feet of collector cloth required for each roll of any specified size, see table on page 56.



Drive Pulley and Discharge on Opposite Side from Cut.

Size No.	Net Price	SIZE OVER ALL			Size of Inlet	Square Ft. of Cloth	Shipping Weight	Size No.
		Height	Length	Width				
13	\$198.00	6' 6"	4' 6"	4' 11"	4 $\frac{3}{4}$ " x 31"	243	1200	13
14	216.00	6' 6"	5' 1"	4' 11"	4 $\frac{3}{4}$ " x 38 $\frac{1}{2}$ "	301	1300	14
15	243.00	6' 6"	5' 9"	4' 11"	4 $\frac{3}{4}$ " x 46"	343	1400	15
16	270.00	6' 6"	6' 4"	4' 11"	4 $\frac{3}{4}$ " x 53 $\frac{1}{4}$ "	415	1500	16
17	297.00	6' 6"	7' 0"	4' 11"	4 $\frac{3}{4}$ " x 61"	481	1600	17
21	243.00	7' 6"	4' 6"	5' 9"	5 $\frac{1}{2}$ " x 31"	323	1500	21
22	270.00	7' 6"	5' 1"	5' 9"	5 $\frac{1}{2}$ " x 38 $\frac{1}{2}$ "	402	1650	22
23	297.00	7' 6"	5' 9"	5' 9"	5 $\frac{1}{2}$ " x 46"	476	1800	23
24	324.00	7' 6"	6' 4"	5' 9"	5 $\frac{1}{2}$ " x 53 $\frac{1}{4}$ "	549	1900	24
25	360.00	7' 6"	7' 0"	5' 9"	5 $\frac{1}{2}$ " x 61"	629	2000	25
26	396.00	7' 6"	7' 7"	5' 9"	5 $\frac{1}{2}$ " x 68 $\frac{1}{2}$ "	723	2100	26
27	423.00	7' 6"	8' 3"	5' 9"	5 $\frac{1}{2}$ " x 76"	813	2200	27
31	396.00	8' 9"	6' 4"	6' 9"	6 $\frac{1}{2}$ " x 53 $\frac{1}{4}$ "	739	2000	31
32	423.00	8' 9"	7' 0"	6' 9"	6 $\frac{1}{2}$ " x 61"	829	2100	32
33	450.00	8' 9"	7' 7"	6' 9"	6 $\frac{1}{2}$ " x 68 $\frac{1}{2}$ "	965	2200	33
34	495.00	8' 9"	8' 3"	6' 9"	6 $\frac{1}{2}$ " x 76"	1073	2300	34
35	540.00	8' 9"	8' 10"	6' 9"	6 $\frac{1}{2}$ " x 83 $\frac{1}{2}$ "	1180	2400	35
36	630.00	8' 9"	9' 6"	6' 9"	6 $\frac{1}{2}$ " x 91"	1288	2500	36
45	765.00	9' 3"	8' 10"	7' 6"	7 $\frac{1}{2}$ " x 83 $\frac{1}{2}$ "	1398	2800	45
46	810.00	9' 3"	9' 6"	7' 6"	7 $\frac{1}{2}$ " x 91"	1514	3000	46

Dust Collectors and Aspirators

"NEW CYCLONE" DUST COLLECTOR



The New Cyclone Dust Collector is constructed thruout of galvanized steel, making it entirely fire-proof—suitable for either outdoor or indoor use.

If in doubt about the size of dust collector to use—write us stating Size, Name and Kind of Machine you desire it for, and we will advise size of dust collector to use. F. O. B. Factory. 78F940

Sizes, Dimensions and Net Prices

Size	Net Price	Total Height	Outside Diam.	Inlet Opening Inches	Area Inlet Sq.in.	Diameter Air Outlet Inches	Area Air Outlet sq. in.	Diam. Dust Outlet in.	Shipping Weight Pounds
0	\$54.00	3' 4½"	2' 5½"	2½x 9	23	8½	56	3	70
1	63.00	4'	2' 11½"	3 x10½	32	10	78	3	100
2	74.70	4' 8"	3' 5½"	3½x13½	47	13	132	3	140
3	84.60	5' 4½"	3' 11½"	4½x16	72	15	176	4	175
4	94.50	6' 1"	4' 5½"	5 x18	90	17	227	4	245
5	108.00	6' 10"	4' 11½"	5½x21	115	20	314	4	315
6	126.00	7' 6½"	5' 5½"	6½x24	156	23½	433	4	395
7	146.70	8' 3½"	5' 11½"	7 x27	189	26	531	5	490
8	166.50	8' 11½"	6' 5½"	8 x30	240	28	615	5	575
9	198.00	9' 7½"	6' 11½"	8½x32	272	31	754	6	715
10	216.00	10' 3½"	7' 5½"	9 x35	315	33	855	7	875
11	247.50	10' 11½"	7' 9½"	9 x40	360	36	1017	8	930
12	270.00	11' 4"	8' 1½"	10 x41	410	39	1194	9	1000
13	297.00	11' 10"	8' 5½"	10½x43	451	41	1320	10	1095
14	337.50	12' 4"	8' 9½"	11 x45	495	44	1520	10	1455
15	360.00	12' 9½"	9' 1½"	11 x48	528	46	1662	10	1600

GUMP'S DUST COLLECTOR

Made of Galvanized Iron

Makes an almost complete separation without a back pressure. Just the machine for your purifier, separator or exhaust system.

78F942

SIZES AND NET PRICES—F. O. B. CHICAGO

Size	Net Price	Total Height	Outside Diameter	Inlet Opening Inches	Diameter Air Outlet Inches	Diam. Dust Outlet Inches	Approx. Shipping Weight Pounds
0	\$32.00	3' 6"	1' 8"	2½x 9	8½	3	60
1	38.00	4' 3"	2' 0"	3 x10½	10	3	90
2	45.00	5' 0"	2' 4"	4 x12	13	3	125
3	50.00	6' 0"	2' 8"	4½x16	15	4	150
4	64.00	6' 10"	3' 0"	5 x18	17	4	225
5	75.00	8' 0"	3' 4"	5 x22	20	4	290
6	85.00	9' 4"	4' 1"	6 x26	23½	4	350
7	100.00	10' 3"	4' 6"	7 x27	26	5	440
8	112.00	11' 0"	5' 0"	8 x30	28	5	520
9	120.00	12' 0"	5' 4"	8 x32	31	6	620
10	125.00	13' 0"	5' 8"	9 x34	33	7	750
11	140.00	13' 6"	6' 0"	9 x38	36	8	825
12	155.00	14' 10"	6' 5"	10 x38	9	9	900
13	170.00	15' 0"	6' 9"	10 x43	11	10	990
14	190.00	15' 9"	7' 2"	11 x43	14	10	1300
15	200.00	16' 3"	7' 6"	11 x45	16	10	1450



Collectors up to No. 4 are shipped set up. No. 4 and up are shipped in sections. Furnished also of extra heavy steel at increased prices.

"NIAGARA" CENTRIFUGAL DISC ASPIRATORS

This machine will make practically all the separations where aspiration is effective. Primarily designed for hominy and grits, it makes an ideal separation of oat hulls from hulled groats or rice hulls from hulled rice. By fitting an upright shaft with steel beaters it makes an ideal finishing machine for wheat before going to rolls, removing all red, branny stock, loosening germ, etc., that have not been removed by cleaners.

Sizes 16" and 20" have 24" fan; size 24" has 30" fan. Sizes 16" and 20" run 120 R.P.M. and 24" and 30", 100 R.P.M. when furnished without Fans.

78F944

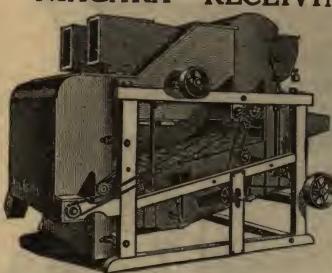
Sizes, Specifications and Net Prices

Size	16" single	20" single	24" single	30" single	30" double
Extreme Height	4' 10"	5' 10"	6' 6"	7' 2"	7' 6"
Extreme Width.....	2' 8"	3' 0"	3' 8"	4' 2"	8' 6"
Extreme Length.....	3' 10"	4' 3"	4' 7"	5' 0"	5' 10"
Size on floor (square).....	2' 1"	2' 4"	2' 7"	3' 3"	3' 3" x7' 5"
Height to feed.....	3' 2"	3' 10"	4' 4"	4' 10"	4' 10"
Height to center of drive pulley	3' 11"	4' 7"	5' 2"	5' 7"	5' 7"
Side drive pulley.....	6"x3¾"	6"x4"	8"x3½"	8"x4"	8"x4½"
Speed. drive pulley.....	600	600	600	600	600
Approximate shipping weight.	500	700	800	1000	1650
Capacity per hour (bushels).....	40	60	90	130	260
Net price (without fan).....	\$143.00	\$145.50	\$162.50	\$182.00	.....
Net price (with fan).....	182.00	195.00	208.00	227.50	409.50



NIAGARA GRAIN CLEANING MACHINERY

"NIAGARA" RECEIVING SEPARATOR



This machine is particularly adapted to handle different kinds of grain as it is received from the farmer's wagon or car. It has two powerful air suctions and three different size screens for removing foreign matter.

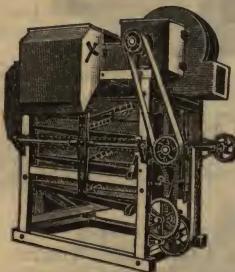
"NIAGARA" UPRIGHT SCOURER

One of the Best Machines of Its Kind on the Market.

This we consider the most efficient scouring machine on the market today. It has more square inches of scouring surface per bushel of grain than any scourer heretofore placed on the market.



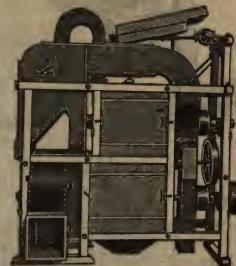
"NIAGARA" MILLING SEPARATOR



Recommended where closer separation is desired than can be obtained on a receiving separator. It has six large screens, kept perfectly clean at all times by steel scrapers, traveling back and forth on top.

"NIAGARA" DOUBLE HORIZONTAL SCOURER

Is really two horizontal scourers in one frame. It has but one fan and one drive pulley, and two scouring cylinders. It is a very efficient machine for the smaller mills; is cheaper and easier to install than two single machines.

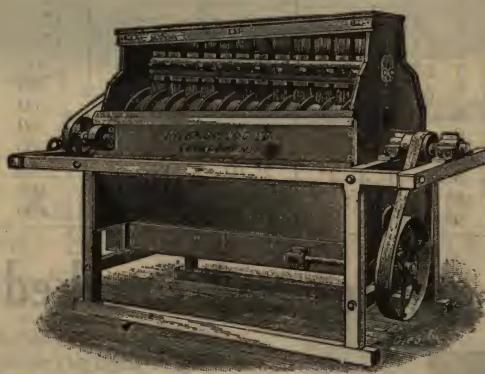


WE ARE AGENTS

For The Entire Line of Richmond Manufacturing Co.'s Grain Cleaning and Separating Machinery

Recognized the World Over for Its High Quality and Efficiency

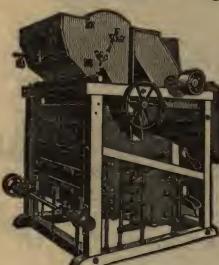
Write For Complete Literature and Prices



"RICHMOND" EMPIRE HORIZONTAL DUSTER

This machine is well and favorably known, and the estimation in which it is held is shown by the very numerous copies or imitations that have been put upon the market by other manufacturers. It can be clothed to separate the middlings from the bran or the fine bran from the coarse in addition to its work as a duster.

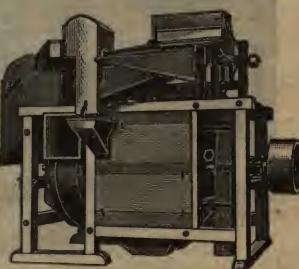
"NIAGARA" COMBINED CORN AND GRAIN CLEANER



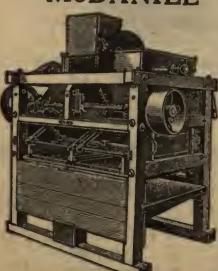
This machine is two Receiving Separators in one frame. That is, it contains screens suitable for receiving different kinds of grains, thus avoiding the necessity of changing the screens when handling different kinds of grain.

"NIAGARA" HORIZONTAL OAT CLIPPER

All oat handlers demand a machine that will do their work profitably and rapidly. To meet this demand we herewith present the Niagara with the firm conviction that it is what we have tried to make it, the most efficient and durable Oat Clipper on the market.



"McDANIEL" ANGLE SCREEN OAT SEPARATOR

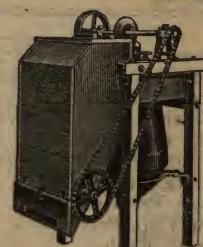


This wonderful machine is the only one ever built having a large capacity within small space which will make a perfect separation of oats from wheat in one separation. Hundreds in daily use.

"NIAGARA" CENTRIFUGAL ASPIRATOR

This is the most efficient type of Aspirator ever constructed. Primarily it was used exclusively in corn mills for aspirating corn goods. Of late we have been installing these machines in elevators for handling large capacity and in flour mills as the final cleaning machine on their stream of wheat before going to their rolls.

For complete Description and Price, see page 58.

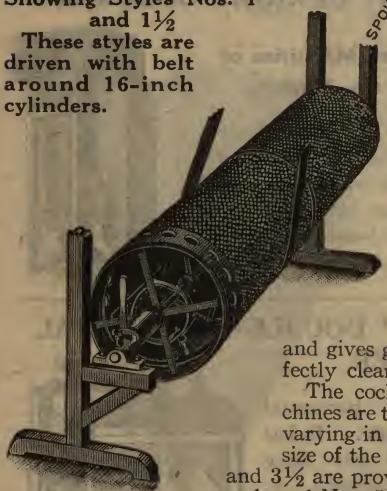


"PRINZ" IMPROVED COCKLE MACHINES

Showing Styles Nos. 1

and 1½

These styles are driven with belt around 16-inch cylinders.

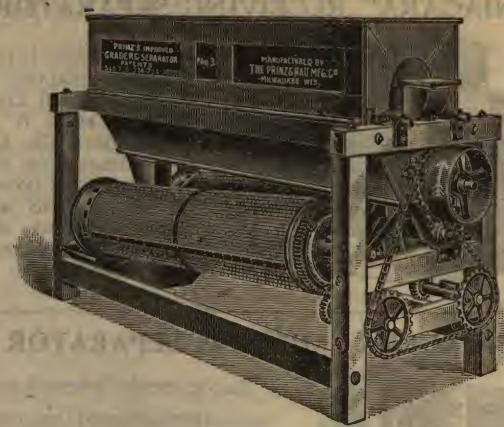


An important feature of the Improved "Prinz" Cockle Machine is the Indented Steel Cylinders, the sharp edges of which cause every kernel of cockle once within the indentation to remain there until it is raised high enough by the revolution of cylinder to permit it to drop into the trough. The smooth steel surface prevents all clogging and gives greater capacity and perfectly clean work.

The cockle reels in all the machines are the same size in diameter, varying in length, according to the size of the machine. Nos. 2, 2½, 3

and 3½ are provided with one grading reel, as shown in cut; Nos. 4 and 4½ with two grading reels and Nos. 5 and 5½ with four grading reels.

No. 1 reel should be set on an incline of 6½ inches from end to end of shaft. No. 1½ should be 7 inches from end to end.



Styles Nos. 3 and 3½

78F972

Sizes, Capacity and Net Prices F. O. B. Factory.

Size	Net Price	Capacity, Bushels	Length OverAll	Width OverAll	Height OverAll	Pulley, Inches	Speed R.P.M.	Cockle Cylinders	Grading Reels	Weight Pounds
1	\$120.25	16 to 18	7' 2"	.....	.....	.....	17-20	1	.....	260
1½	157.25	18 to 25	8' 2"	.....	.....	.....	17-20	1	.....	275
2	240.50	25 to 35	7' 6"	2' 3"	4' 6"	12 x 3	60	1	1	850
2½	286.75	35 to 45	8' 6"	2' 3"	4' 8"	12 x 3	60	1	1	950
3	397.75	45 to 70	8'	3' 2"	5' 0"	12 x 4	60	2	1	1400
3½	425.50	60 to 80	9'	3' 2"	5' 2"	12 x 4	60	2	1	1500
4	508.75	70 to 110	8'	3' 2"	7' 0"	18 x 4	60	2	2	2400
4½	592.00	100 to 130	9'	3' 2"	7' 2"	18 x 4	60	2	2	2500
5	740.00	160 to 190	8'	5'	7' 8"	18 x 4	100	3	4	3350
5½	888.00	190 to 230	9'	5'	7' 10"	18 x 4	100	3	4	3550

"Beall" Feed Separator and Cracked Corn Polisher



This machine receives all of the stock directly from the break rolls or from dryers or coolers, takes out all of the fine feed and at the same time polishes the cracked corn or grits.

This is not a grading reel as it only takes out the fine feed meal. From this machine the product should go to grading reels and aspirators.

Sieves and Reels have been found to be unreliable for this purpose and neither do they polish the grain—this being the only machine on the market made for this particular purpose. The capacities in the table below can be relied upon.

There is a retarding iron or valve in the top which extends across the machine from end to end. This can be adjusted so that the stock is thrown from the beaters to the retarding valve. The amount of adjustment depends on the judgment of the miller as to how highly he wishes to polish the grain.

The feed from this machine goes direct to the feed bin without any further handling.

F. O. B. FACTORY

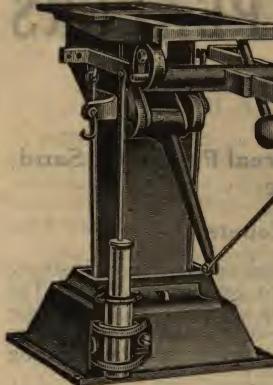
78F973

Sizes, Dimensions and Net Prices

Sizes	No. 1	No. 2	No. 3	No. 4	No. 5
Height.....	4' 5"	4' 8"	4' 10"	5'	5' 11"
Length.....	6'	7'	7' 4"	7' 6"	7' 8"
Width.....	2' 4"	2' 6"	2' 10"	3' 2"	3' 7"
Size on Floor.....	5' x 2' 4"	5' 1" x 2' 6"	5' 4" x 2' 10"	5' 7" x 3' 2"	5' 8" x 3' 7"
Height to Feed.....	4'	4' 2"	4' 10"	5'	5' 11"
Drive Pulley.....	12" x 8"	14" x 10"	18" x 10"	20" x 10"	24" x 10"
Rev. Per Min.....	480	450	450	425	400
Bu. Cap. Per Hour.....	20 to 40	40 to 80	80 to 120	120 to 160	160 to 250
Price, Each.....	\$176.00	\$209.00	\$250.00	\$300.00	\$360.00

"Commonsense" Wheat Steamer and "Columbian" Feed Governor

F. O. B. FACTORY



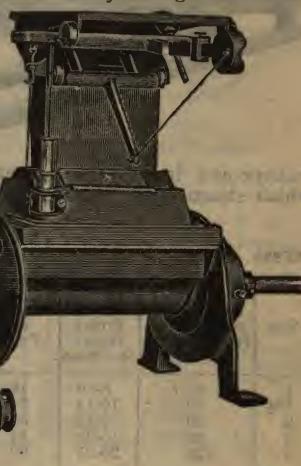
Size No.	Capacity Bushels per Hour	Pulley	Speed R. P. M.	Weight of Steamer Only	Price of Columbian Feed Gov. 78F974	Price of Steamer Only 78F976	Price of Steamer and Governor 78F978
0	8	6 x 3	275	200	\$30.00	\$60.00	\$90.00
1	12	6 x 3	275	200	30.00	60.00	90.00
2	15	6 x 3	275	200	30.00	60.00	90.00
3	18	6 x 3	275	200	32.50	62.50	95.00
4	25	6 x 3	300	200	35.00	65.00	100.00
5	30	6 x 3	325	200	37.50	67.50	105.00
6	40	6 x 3	350	200	40.00	72.50	112.50
7	50	8 x 3	375	220	42.50	75.00	117.50
8	60	8 x 3	400	220	45.00	77.50	122.50
9	75	8 x 3	425	220	47.50	80.00	127.50
10	90	10 x 4	450	250	50.00	85.00	135.00
11	115	10 x 4	500	250	52.50	90.00	142.50
12	130	10 x 4	550	250	55.00	95.00	150.00

The Columbian First Break Feed Governor is too well known to require description. It is guaranteed to keep a perfectly regular feed on the first break regardless of the condition, kind or quality of the wheat. Easily changed and when once set will absolutely feed that amount. Height to where grain enters 14 inches.

Constructed entirely of metal and is practically indestructible.

The "Commonsense" Wheat Steamer is popular because it has no hidden traps, valves or springs to get out of order; no rush of water from condensed steam when starting; no chokes; perfectly uniform steaming, and when used with feed governor gives an absolutely uniform feed. Dry hot steam or saturated steam can be used at will.

The combination shown here cannot be improved upon. It is guaranteed to be satisfactory. Height over all, sizes 0 to 8 inc., 28 in.; sizes 9 to 12 inc., 30 in. Length No. 0 to 6, 70 in.; 7 to 9, 72 in.; 10 to 12, 74 in.



"Beall" Improved Automatic Wheat Steamer

Automatic Wheat Steamer

Made of two copper cylinders, one inside the other, leaving a space between the two which is filled with steam through pipe 1 and the condensation of this steam passing off through pipe 2. Only substantially "dry" steam enters inside of steamer (through perforations under flange 3), to temper the wheat. This dry steam might be said to be under pressure, as the wheat prevents escape of steam at the top and bottom of the steamer.

The pressure of dry steam suddenly applied to wheat tends to loosen the bran from the inside of the berry and toughens it so it remains tough throughout the reductions. The inside of the berry is not even moistened, the dry steam penetrating the bran only. This leaves the flour-producing part of the berry in its natural state.

Absolutely automatic and controls the flow of wheat into it to suit feed of rolls.

"Beall's" Adjustable Steamer can be furnished when desired at the same price as the Automatic Steamer, being made in the same sizes, and adjustable instead of automatic, the adjustment of a hand wheel attachment.



flow being regulated by means of a hand wheel attachment.

Sizes, Dimensions, Net Prices, etc.
F. O. B. FACTORY
78F960

"Beall" Corn Steamer

Furnished Either Single or Double.



Single Steamer with Regular Drive.

Corn should be properly tempered before it goes to the degeminator. When water is used we recommend the use of the double steamer.

Water can be used in this corn steamer and the corn made as wet as desired.

Can be used also for steaming wheat, barley, oat groats, etc.

Can be furnished with iron supports for bottom, top, or side support; also with counter shaft end drive instead of that shown in cut.

Unless otherwise specified we furnish this machine like cut.

Pulley speed all machines—150 R. P. M. Conveyor—45-60 R. P. M.

SIZES AND NET PRICES F. O. B. FACTORY

Size	Height Over all Inches	Length Over all Inches	Pulley Inches	Shipping Weight Lbs.	Capacity Bushel per Hour	Net Price, Single
0	16	50	10 x 3	300	10- 25	\$75.00
1	16	62	12 x 3	350	25- 50	85.00
2	16	74	14 x 3	400	50- 85	100.00
3	16	110	16 x 6	600	85-120	150.00
4	16	134	18 x 6	950	120-160	200.00

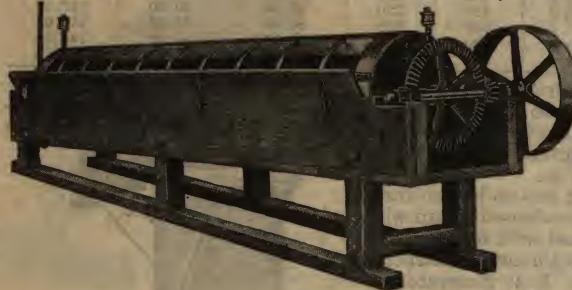
Double machines at double the single price.

STEAM DRYERS AND BARLEY PEALERS

CUTLER'S STEAM DRYER

For Drying Corn Meal, Hominy, Brewers' Grits and Meal, and all Cereal Products, Sand, Coal Dust, Paint, Clay, Mica, Graphite, Ores, etc.

Used and Recommended by the Largest and Best Mills in the Country



leakage and damage from expansion and contraction of its which steam must move constantly through every pipe.

78F950

SIZES, DIMENSIONS AND NET PRICES
Prices are Net F. O. B. Boston, Mass.

Size	Cap. Bu. of Meal per Hr. 70 to 100 lbs. Steam Pressure	Horse Power Boiler Required	Number of Pipes	Length of Pipes Feet	Diam. of Cylinder Inches	Size Supply Pipe Inches	Length Ft. In.	Width Ft. In.	Height Ft. In.	Wt., Lbs. Wood Frame	Size of Pulley	Speed of Pulley Min.	Revolu- tions per Minute of Cylinder	Net Prices Wood Frame	Net Prices Steel Frame
1	20	8-10	16	10	16	¾	13 4	2 2	3	1700	20x3	65	18	\$332.50	\$402.50
1½	30	10-12	24	20	20	¾	15 8	2 8	3 6	2300	24x4	64	16	437.50	525.00
2	50	10-15	34	12	22	¾	15 8	2 11	3 9	3000	24x4	80	15	525.00	612.50
3	80	15-20	52	12	30	1	16	2 3	7 4	4800	30x5	70	14	805.00	875.00
4	120	20-25	90	12	40	1¼	16 7	4 5	5 2	7000	36x7	60	12	1,050.00	1,225.00

"PIONEER" BARLEY PEARLER

This machine has for a great many years been successfully used for hulling or pearling barley, and in our opinion is the best machine today for the purpose.

The stock is fed in a continuous stream, and while one machine can be used it is recommended that at least three machines be used on the same stock to completely hull and pearl the material being fed. One machine can be used for hulling, but the material should be run over the machine two or three times if desired to be pearled. It is also well, before feeding the stock to the machine, to have it graded so that all the berries will be of about the same size and thereby increase the efficiency of the machine. In large plants the graded barley can be run continually from one machine to the other.

The capacity is approximately six bags an hour or sixty bags in a ten hour run. The dimensions of the machine are as follows:

Floor Space required	41" x 57"
Height overall	52"
Width overall	.57"
Length overall	.56"
Size of pulley	18" x 9"
Speed	400 to 500 R. P. M.



Front
View
Showing Main
Drive Pulley.

This machine is built exceptionally heavy to withstand vibration. The hulling stone is of a special construction, the surface of which is covered with a composition having a great abrasive quality. The jacket is perforated with slotted holes and is equipped with a device so that it may be adjusted to conform with the wearing of the stone. By the perforations in the jacket the fine feed created by hulling will discharge in a conveyor which can be spouted to bin, hopper or wherever it may be desired in the mill.

78F1481 Price, net, complete as shown in cut. Plain Bearings \$525.00

78F1483 Price, net, with Ball Bearings ("S.K.F.") 595.00

"BOWSHER" CRUSHERS AND GRINDERS

Will Crush and Grind Corn and Cob
As Well As All Kinds of Grain

BOWSHER MILLS are unexcelled for crushing and grinding corn and cob, shelled corn, and all kinds of small grain. The peculiar design of the grinding mechanism, using conical shaped plates, which do the work close to the center of the shaft, make them very light running for their capacity. The grinding efficiency of these mills is also a strong feature.

The HOPPERS are large with a partition which enables ear corn and small grain to be ground together. When grinding ear corn alone, the partition may be removed and the entire hopper is thrown into one. With the hoppers so constructed small grain and ear corn can be mixed in any desired quantities.

THE CONE GRINDING PLATES have long life, provide large capacity for power used and have a "shear" dress which opens and grinds the material instead of rolling and rubbing it flat. A feature of the cone shaped grinders is that less than one-half of the end pressure is sustained by the step. This reduces power loss and reduces the tendency to heat found in disc plates. When the mills run empty the grinders do not touch. The grinders for the Nos. 8, 7, 4 and 3 Mills are made in sections while the smaller sized mills are cast in one piece.

The sizes 8, 9, and 10 are especially recommended for ear corn.

78F1483

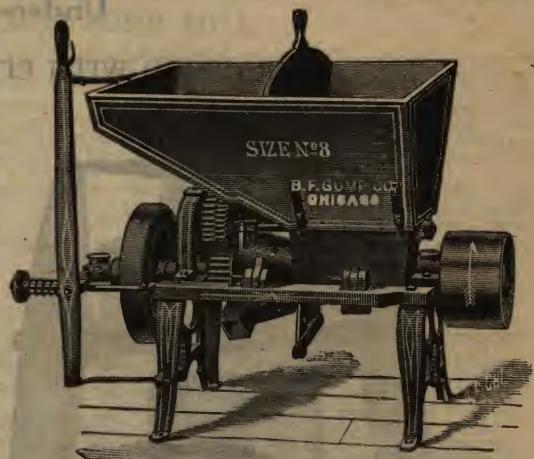


Illustration Shows the No. 8 Size Crusher.

Size of Mill	Floor Space Inches	CAPACITY BUSHELS PER HOUR				Speed R. P. M.	Pulley, Inches	Horse Power Required	Weight, Pounds	Net Prices
		Shucked Ear Corn	Oats and Shelled Corn	Small Grains	Unshucked Ear Corn					
No. 0	42 x 20	4 to 12	5 to 15	5 to 20	—	275 to 550	10 x 4½	2 to 4	215	
No. 1½	46 x 22	7 to 16	—	8 to 20	—	400 to 600	10 x 6½	4 to 6	335	
No. 2	39 x 20	4 to 15	—	5 to 20	—	450 to 1000	8 x 6½	4 to 6	240	
No. 2½	57 x 24	12 to 25	—	15 to 30	—	400 to 600	10 x 6½	6 to 8	410	
No. 3	43 x 27	12 to 15	—	15 to 40	—	800 to 1600	6 x 6½	6 to 8	305	
No. 4	47 x 27	12 to 30	12 to 25	15 to 40	10 to 20	800 to 1600	6 x 6½	6 to 10	375	
No. 7	55 x 30	15 to 40	15 to 50	20 to 60	—	800 to 1200	8 x 8½	8 to 12	490	
No. 8	55 x 30	20 to 50	20 to 55	25 to 60	20 to 40	800 to 1200	8 x 8½	10 to 15	605	
No. 9	72 x 33	40 to 80	40 to 100	50 to 125	30 to 60	1050 to 1200	10 x 10	15 to 18	850	
No. 10	75 x 34	50 to 100	75 to 150	80 to 175	40 to 80	1050 to 1200	12 x 12	16 to 25	1060	

When writing for Grinders, state if Grinders are wanted with or without Elevator.

ELEVATORS

For Mills		For Mills		For Mills	
3' Short Sacking.....	4 feet high.....	Nos. 0, 1½	Nos. 2, 2½	6" Regular Sacking.....	8 feet high.....
4' Short Sacking.....	4 feet high.....	Nos. 3, 4, 7	4' Wagon Box.....	10 feet high.....	Nos. 9, 10
4' Regular Sacking.....	7 feet high.....	No. 8	5' Wagon Box.....	10 feet high.....	Nos. 3, 4, 7
5' Regular Sacking.....	7 feet high.....		6' Wagon Box.....	10 feet high.....	Nos. 8, 9, 10

Prices on Application.

PEERLESS FEED GRINDING MILLS



For Crushing and Grinding Corn and Cob,
Shelled Corn and Grain

This Mill has been designed to meet the demand for a mill that can be operated with **light power** and yet have a reasonable capacity and do fine grinding and sell at a low price.

It is equipped with a **patent quick release**, by which the plates can be instantly thrown apart without changing the adjusting screw, a **ball bearing device** for taking the end thrust of the main shaft that will not heat or cause friction and a wooden pin break to protect the machine in case any hard substance gets into it. Made of iron and steel, excepting Hopper. **One pair fine and one pair of coarse plates furnished with each mill.**

The **grinding plates** of the Peerless Feed Mills are made of chilled iron with **machine cut corrugations**, so that they are absolutely perfect and true and will out-last any ordinary grinding plate threefold. They also can be re-cut when dull and are made in sections, three of which constitute a plate, two plates to a set.

Being in sections permits the grinding plates to be removed without taking the machine apart.

SIZES, CAPACITIES AND NET PRICES.

Catalog Number	Size	Horse Power Required	Size of Pulley	Speed R. P. M.	Capacity per hour	Size of Plates	Weight	Net Price Mill	Net Price Extra Plates
78F1484	6-X	2 to 6	14x4	300 to 600	6 to 20 bu.	6½-in. 8-in.	175 lbs. 240 lbs.	\$36.50 57.00	\$2.50 -3.50
78F1486	400	6 to 10	14x5	300 to 600	10 to 35 bu.				

78F1488 Sacking Elevator for any size of the above mills. Price

"Queen of The South" French Buhr Mills

Under-Runner Type

FURNISHED WITH EITHER BELT OR GEAR DRIVE



Showing Belt Driven Mill.

The QUEEN OF THE SOUTH MILL is recommended where a high class of table meal grinding is desired. It is very easy to operate and any person with ordinary mechanical ability can operate it and get the best results.

This is called an under-runner, horizontal, stiff spindle mill as the revolving stone is underneath and fastened rigidly to the spindle on a taper fit and straight key, the grinding pressure forcing it tight on the spindle.

Mills of this type have the greatest capacity of any horizontal mills. The stones are genuine French Buhr stones, especially selected for us at the quarries in France. The runner stone is balanced with the



Showing Mortise Gear Driven Mill.

spindle and the pulley, thus assuring them running smooth and even. The bed or upper stone is supported on three stand bolts, which enables the operator to level or trim the stone in perfect alignment with the runner.

The fineness of the grinding is adjusted by means of the hand wheel, screw and lighter bar which raise and lower the mill step, causing the runner stone and spindle to be adjusted as close to the bed stone for fine or coarse grinding as the operator may desire. The grain is delivered to the hopper of the mill and by means of the adjustable shaker shoe is fed in an even stream to the stones, which are well furrowed and dressed so that the meal is discharged without undue heating.

F. O. B. FACTORY

SIZES, SPECIFICATIONS AND NET PRICES

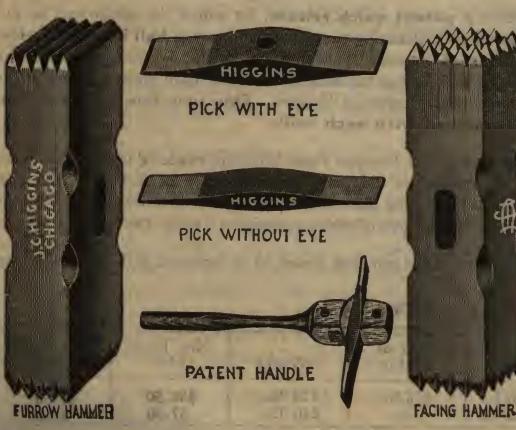
Diameter of Stone	15"	18"	20"	22"	24"	i	26"	28"	30"	36"
Cap. Bu. per Hour Feed	5 to 10	8 to 16	10 to 18	12 to 20	14 to 22		16 to 24	18 to 26	20 to 30	25 to 40
Cap. Bu. per Hour Meal	3 to 5	6 to 8	7 to 10	8 to 12	9 to 14		10 to 16	12 to 18	14 to 20	18 to 25
H. P. Required	4 to 6	5 to 8	6 to 10	7 to 12	8 to 14		9 to 16	10 to 18	12 to 20	14 to 24
Floor Space Pulley Drive	32 x 32"	32 x 32"	40 x 40"	40 x 40"	40 x 40"		44 x 44"	44 x 44"	48 x 48"	
Floor Space Gear Drive	32 x 62"	32 x 62"	40 x 66"	40 x 66"	40 x 66"		44 x 68"	44 x 68"	48 x 69"	
Height to Top of Hoppers	4' 7"	4' 7"	4' 8"	4' 8"	4' 8"		4' 10"	4' 10"	5'	
Size Pulley, Pulley Drive	10 x 6"	12 x 8"	12 x 8"	12 x 8"	12 x 8"		16 x 9"	18 x 10"	18 x 10"	20 x 10"
Size Pulley, Gear Drive	16 x 8"	16 x 8"	16 x 8"	16 x 8"	16 x 8"		18 x 8"	20 x 10"	20 x 10"	20 x 12"
*Speed R. P. M., Pulley Drive	600	550	525	500	475		450	425	400	375
*Speed R. P. M., Gear Drive	300	275	265	250	240		225	215	200	190
Weight, Pulley Drive, Lbs.	590	755	965	1060	1150		1270	1540	1675	2200
Weight, Gear Drive, Lbs.	825	995	1250	1350	1450		1670	2050	2170	2800
Net Price, Pulley Drive	\$160.00	\$180.00	\$200.00	\$220.00	\$250.00		\$280.00	\$310.00	\$350.00	\$450.00
Net Price, Iron Gears	225.00	240.00	260.00	290.00	330.00		350.00	380.00	440.00	540.00
Net Price, Mortise Gears	250.00	270.00	290.00	320.00	360.00		390.00	420.00	470.00	570.00

* Many people run these mills 10% to 20% faster than given speeds with good results and get increased capacity.

CELEBRATED "HIGGINS" MILL PICKS Guaranteed Highest Quality

For over forty years the standard Mill Pick, nothing better made. We sell only the Genuine John C. Higgins' Picks, Guaranteed.

NET PRICES	
2 lb. Mill Picks or less in weight	each \$2.30
2½ lb. Mill Picks	" 2.90
3 lb. Mill Picks	" 3.45
3½ lb. Mill Picks	" 4.00
4 lb. Mill Picks	" 4.60
Larger Picks than stated at \$1.15 lb. net.	
No. 78E997	
Pick Handles, Patent Socket	" 2.00
Plain Hickory Handles, for Eye Picks	" .20
Dressing Old Picks	" \$0.60
Eye Picks, per weld	" \$1.00
Cracking Picks	" 1.00
(Prices for Welding do not include Dressing)	
No. 78E998	
Furrow and Facing Hammers	
3 pounds and under	" \$5.50
3½ or 4 pounds	" 6.00
Dressing Old Furrow or Facing Hammers	" 2.00



VERTICAL FRENCH BUHR MILLS

"EXPORT" VERTICAL FRENCH BUHR MILL

The "EXPORT" Mill is an iron frame vertical French Buhr Stone Mill, designed especially for feed grinding where large capacity is desired. The Stones are solid French Buhr Stones. The Frame is heavy cast iron which divides horizontally, preventing the bearings from getting out of alignment.

This Mill has a special feature of an adjustable bed stone which is self trammimg. The runner stone is fit to the spindle on a taper fit and straight key, becoming tighter under the grinding pressure, thus preventing it from getting loose. The bed stone is set in an iron back with turned lugs on each side, allowing it to swivel in trunnions which are adjustable. By these means the operator can set the bed stone in tram with the runner and when in this position it will tram itself to the runner which is a feature not found in any other mill.



The mill is equipped with a cast iron hopper in which the grain to be ground is discharged. The feed to the mill is regulated with a screw conveyor in the bottom of this hopper and by means of a slide at the outlet of the hopper an even feed is maintained to the mill, allowing it to do its most efficient work.

The grinding thrust is against a ball bearing and the screw pressure against this ball bearing regulates the fineness of the grinding.

F. O. B. FACTORY.

78F987 SIZES, SPECIFICATIONS AND NET PRICES.

Diam. of Stone.....	15"	18"	24"
Bu. Cap. Feed per Hr.....	10 to 20	15 to 30	20 to 45
Bu. Cap. Meal per Hr.....	5 to 10	8 to 14	10 to 20
Horse Power Required.....	6 to 10	8 to 12	14 to 20
Floor Space Inches.....	25x42	28x46	38x56
Height to Center of Pulley.....	15"	17"	20"
Size Drive Pulley, In.....	10x6½	12x8½	16x10½
Speed R. P. M.....	625-1000	600 to 950	550 to 800
Shipping Weight Lbs.....	670	950	1770
Net Price, Each.....	\$165.00	\$200.00	\$320.00

"PLANTER'S PRIDE" VERTICAL FRENCH BUHR MILL

The "PLANTER'S PRIDE" is an iron frame vertical French Buhr Stone Mill. The stones are solid French Buhr. This mill is so well known that a thorough description is not necessary. It is built along such simple lines that any mechanic of ordinary ability can operate it and get the best results.

The runner stone is fastened rigidly to the end of the spindle and is dressed in tram with the bed stone so that no trammimg or adjusting is necessary.

It is equipped with a ball bearing thrust to take the grinding pressure which works against the adjusting hand wheels which regulate the fineness of the grinding.

It has a large coil spring which allows the stones to part and let foreign substances pass between the stones without causing much damage. This spring also forces the stones apart when there is no feed on the machine, thus preventing them from becoming damaged by running together.

This mill has a very efficient feeding device consisting of a cast iron hopper with a screw feed in the bottom and a regulating gate which allows an even feed to go to the mill at all times.

F. O. B. FACTORY

78F988

SIZES, SPECIFICATIONS AND NET PRICES

Diam. of Stone.....	10"	12"	14"	18"	20"	22"
Bu. Cap. Feed, per Hr.....	5 to 9	7 to 12	10 to 20	15 to 30	18 to 35	22 to 40
Bu. Cap. Meal, per Hr.....	2 to 5	3 to 6	4 to 10	6 to 14	8 to 16	10 to 18
H. P. Required.....	3 to 4	4 to 6	4 to 7	8 to 12	10 to 16	12 to 18
Floor Space, Inches.....	18x44	18x44	28x57	28x57	29x57	34x62
Ht. to Top of Hopper.....	32"	32"	41"	43"	44"	48"
Size Drive Pulley, In.....	7x4½	8x4½	10x5½	12x7½	12x7½	12x8½
Speed R. P. M.....	600-1100	600-1000	600-1000	500 to 900	500 to 800	450 to 750
Shipping Weight, Lbs.....	400	425	775	1000	1090	1390
Net Price, Each.....	\$115.00	\$135.00	\$160.00	\$200.00	\$250.00	\$285.00



"FARM AND PLANTATION" MILL

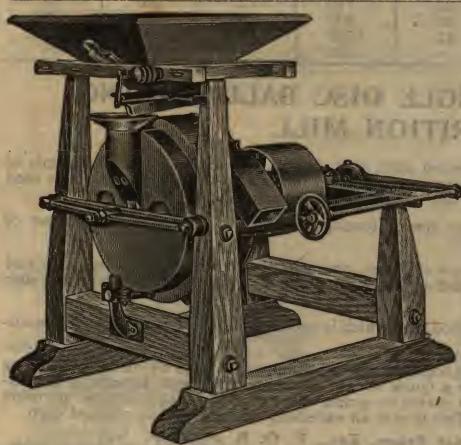
Genuine French Buhr Stones --- Requires Little Power. For Feed Grinding, or Making Corn Meal or Graham.

The FARM AND PLANTATION French Buhr Stone Mill is built in a vertical wooden frame which allows it to be sold somewhat cheaper than the iron frame vertical mills but is constructed with the same care and careful workmanship as the other mills. The wood frame mill is, of course, not as strong and substantial as the iron frame mills, and where a medium amount of grinding is desired, the mill gives excellent results in grinding feed and meal.

The runner stone is fastened rigidly on the end of the spindle and the bed or stationary stone is supported on a pivot allowing it to tram itself to the runner stone.

The fineness of the grinding is adjusted by means of a hand wheel and lock nut at the end of the spindle and is also equipped with a release spring permitting any hard substance to pass through the mill without damaging the stones.

This mill is recommended where medium capacity and an average amount of work is desired.



78F990 SIZES, CAPACITIES AND NET PRICES—F. O. B. FACTORY

Diameter of Buhrs	Horse-Power	Size of Pulley	Capacity Bu. per Hr.		Revolutions per Minute	Weight Lbs.	Floor Space Inches	Height to Top of Hopper Inches	Height to Spout Inches	Net Price Without Bolter	Net Price with Bolter Attached
			Table Meal	Feed							
14	3 to 5	9x5½	5 to 8	6 to 20	800 to 1200	400	34½x26	38	18	\$133.00	\$155.00
18	4 to 10	11x6½	8 to 12	15 to 30	600 to 800	600	41 x32	46	24	172.00	195.00
22	7 to 12	14x8½	10 to 18	20 to 40	600 to 800	1200	54 x42	54	26	250.00	280.00

Tight and Large Pulley. Capacity per Hour. The Mill

THE "HALSTEAD" ATTRITION MILL

"The Mill of Great Economy"

Plates So Designed As To Give Four Cutting Edges.

A Mill Which Is Low in Price---Gives Absolute Satisfaction, with Low Up-Keep Expense.



Showing the Styles No. 18-B and 24-B. Double Head.



Showing 18" "Tiger" Single Head.

The Halstead Mill has gained great popularity because it combines great efficiency with low price and small upkeep expense.

It is so constructed that the center of the disc itself is brought to the outside of the casing and through this open head the grain passes directly through the grinding plates. This does away entirely with the use of seal rings which when worn often allow the grain to leak through and mix with the ground feed.

The Grinding Plates of the Halstead Mill are so made as to give double wear as they are alike on both sides. The mills may be run in either direction and each side of the plate has two cutting edges. When one side of the plates are worn they may be unbolted from the head and put with the worn faces toward the head, thus presenting an entirely new cutting surface. In this way one set of plates have four cutting edges. As Halstead Plates sell at a lower price than other plates the biggest item of replacement is reduced more than one half.

The Bearings are wick oiling. The oil is evenly distributed over the surface and proper lubrication is maintained with little attention. While, of course, these bearings are not as light running as ball bearing equipment, Halstead Mills deliver remarkably large capacity for the horse power required to operate them.

The Bearing Boxes are not rigid in the frame but are constructed on the pivot principle so that whatever adjustment is made in one does not cramp or bind in the other.

End Adjustments—All mills are equipped with self-adjustable end thrust bearings and quick release levers. This provides against bearings heating and also allows the operator to free the mill of grain to provide easy starting.

The Construction of the Base of the Style No. 18 Mill differs from the Style 18-B and 24-B. It can be belted from above, below or from right or left angles. The frames of the 18-B and 24-B are heavier and being open on the rear side, permit belting from nearly any desired angle. The 24-B being a larger mill is of heavier construction but of the same design as the 18-B.

The "TIGER" is a small single head mill, economical and durable. It has great capacity for the power required.

These Mills are especially adapted for grinding all kinds of grain to any desired fineness. Fully guaranteed in every way.

78F984

SIZES, CAPACITIES AND NET PRICES—F. O. B. FACTORY.

Size No.	Price	Capacity Bushels, per Hour	Speed R. P. M.	Size Pulley Inches	Horsepower	C. to C. of Pulleys	Net Weight Pounds	Overall Dimensions, Inches		
								Length	Width	Height
18	\$200.00	40 to 50	1800	9 x 5	15 to 20	36	730	72	24	33
18-B	225.00	40 to 50	1800	9 x 5	15 to 20	36	800	70	24	36
24-B	300.00	75 to 100	1600	12 x 6	25 to 40	42	1500	86	34	42
"Tiger"	150.00	16 to 24	2000	9 x 5	6 to 8	.....	530	37	26	36

THE MUNSON SINGLE DISC BALL-BEARING ATTRITION MILL

This mill will grind corn and cob, shelled corn, oats, barley, wheat and in fact, all kinds of grains used for feeding purposes, giving as great capacity in relation to the amount of power used and producing a quality equal to that of any Double Disc Attrition Mill.

This mill is self-contained, requires no special foundation and can be driven from below or above at any angle.

The grinding device consists of two sets of plates, one being bolted to the revolving disc and the other to the case of the mill. The grinding plates are made of a special metal which is tough and hard.

The mill is fitted with an automatic shoe feed which is noiseless in operation and which maintains a uniform and positive feed.

The plates are prevented from striking together when the hopper is empty by means of a spring collar; the plates can be thrown apart by a quick release attachment without disturbing the adjustment; relief springs, which permit the plates to spring apart when any hard substance enters the mill, is another important feature. This is also an excellent mill for making cracked corn.



78F982 / 18-inch Munson Mill

Dimensions and Net Prices, Etc., F. O. B. Factory.

Size	Weight lbs.	Length Over- all	Width Over- all	Height Over- all	Size Pulley	Speed for Cracked Corn	Speed for Meal	Capacity of Cracked Corn	Capacity of Meal	Power Required	Net Price
12 in.	800	4' 6"	1' 5½"	3' 0"	6x5	1000 R.P.M.	3000 R.P.M.	40 to 60 bu.	12 to 25 bu.	6 to 12 H. P.	\$272.00
18 in.	850	4' 6"	2' 0"	3' 4½"	8x6	900 R.P.M.	2400 R.P.M.	60 to 100 bu.	20 to 35 bu.	10 to 15 H. P.	328.00
20 in.	940	4' 6"	2' 0"	3' 4½"	9x6	800 R.P.M.	2000 R.P.M.	75 to 125 bu.	25 to 40 bu.	12 to 18 H. P.	352.00
24 in.	1400	5' 6"	2' 4½"	4' 1"	10x7	700 R.P.M.	1800 R.P.M.	100 to 150 bu.	30 to 50 bu.	15 to 25 H. P.	424.00

Munson and Robinson Plates. Extra Plates for 12-inch Mills @ \$14.50 per Set. For 18-inch Mills @ \$17.00 per Set. For 24-inch Mills @ \$22.75

Ball Bearing Double Head Attrition Mills

"BAUER" BALL BEARING ATTRITION MILLS



"Scientific" Attrition Mills never fail to give satisfaction because they combine efficiency and durability in such a way that they work day after day without trouble or expense. They are dependable machines—a feature that every one must appreciate. They are equipped with large ball bearings and are very light running. There is little or no wear because the friction is reduced to the minimum. The cost for lubricants will not be 10 cents for every dollar that plain bearings would use. They are rigid, strong and self-trimming. The perfect trunnion of the plates is one of the strong features and insures a product of uniformly fine grade. A safety relief spring allows plates to separate to permit pieces of iron, etc., to pass between them without doing serious damage.

Grinding plates cannot "drift" together because of the special construction of the end housing, having a device which positively controls the adjustment of the plates. The Temper Screw not only tends to force the plates together when a finer adjustment is required, but also draws the plates apart to a fixed adjustment and maintains that adjustment continuously. This feature is patented and will not be found on any other machine. The patented renewable ring at the eye of the feeding head, the patented renewable seal ring and the positive force feeder are just a few of the exclusive features of the "Bauer" Mill. The "Bauer" grinding plates are patented, distribute the wear evenly on the surface of the plate and have long life.

"BAUER" BELT DRIVEN MILLS

These mills are of the same general design as the motor driven mills. The same general description applies to both. There is no belt driven mill on the market that will operate with so little power loss due to friction for the large dust proof ball bearing equipment represents the highest efficiency obtainable.

78F980 Specifications and Net Prices f. o. b. Factory.

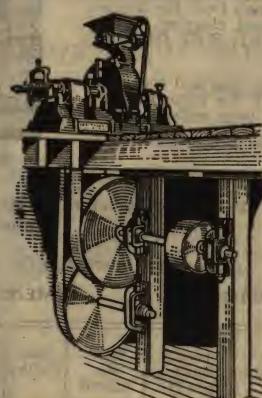
Diameter of Plates	19"	22"	24"	26"
Pulley	10"x8"x2 $\frac{1}{8}$ "	10"x8"x2 $\frac{1}{8}$ "	10"x8"x2 $\frac{1}{8}$ "	16"x10"x3"
Speed R.P.M.	2250	1950	1800	1450
Lgth. over all	81"	81"	81"	81"
Wdth. over all	35"	35"	35"	35"
Floor Space of Base	72"x30"	72"x30"	72"x30"	72"x30"
Center to Center of Pulleys	44"	44"	44"	44"
Floor to Center of Shaft	18"	18"	18"	18"
Height to top of Hopper	51"	51"	51"	51"
Diameter of Shafts	3 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "
Weight Lbs.	2500	2600	2700	3200
Horsepower	15 to 20	20 to 30	25 to 30	40 to 60
Capacity per hour, Lbs.	1300 to 3000	1700 to 4500	2200 to 7500	3400 to 9000
Horse Power Running Idle	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$
NET PRICE	\$494.00	\$572.00	\$630.00	\$693.00

We furnish Plates for Robinson, Monarch, Unique and Bauer Attrition Mills.

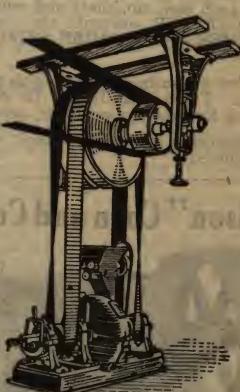
STANDARD ATTRITION MILL DRIVES



No. 1 Drive from Below with Special Tight and Loose Pulleys.



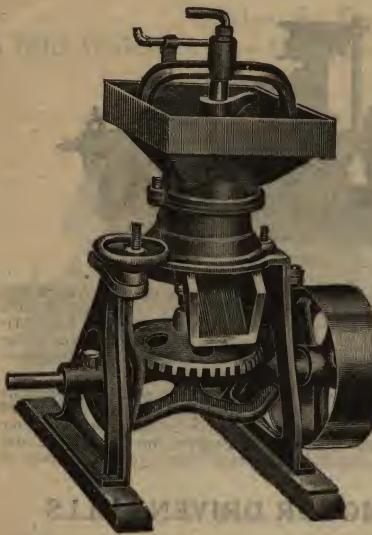
No. 2 Drive from Below with Counter Shaft and Idler Shaft.



No. 3 Drive from Above with Special Tight and Loose Pulleys.

We can furnish All Styles of Drives for Attrition Feed Grinding Mills — Prices on Application.

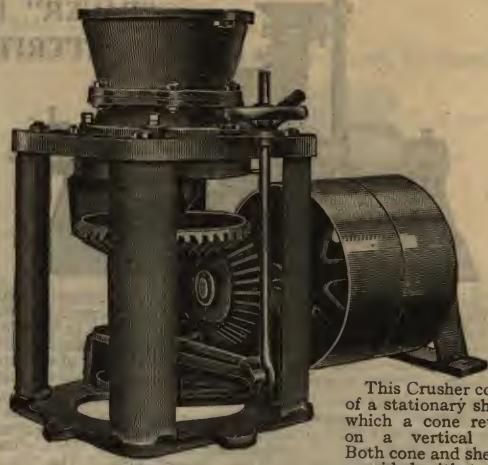
Size 5 "Excel" Corn and Cob Crushers Size 6



Constructed on the same principles as the No. 6 Crusher, only somewhat lighter and smaller in size. Made especially to meet the demand for crushers of the vertical type by those who have not power enough to run larger capacity ones. This crusher is designed for reducing ear corn fine enough so that it can be readily ground to fine feed meal on a buhr stone, roller or other grinding mill. It is exceptionally strong

and durable, will not choke and does uniform work. Crusher can run either way by changing the pulley from one side to the other. Hopper made square for attaching a square conducting spout or wood hopper. The lightest running crusher made.

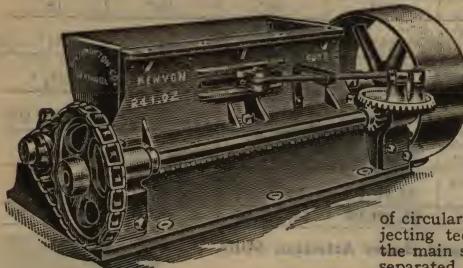
Height to top of Hopper.....	34-in.
Floor Space.....	18x22-in.
Size of Hopper.....	16x16-in.
Size of Pulley.....	16x5-in.
Speed.....	150 to 400 R. P. M.
Capacity.....	40 bu. per hr.
Weight.....	400 lbs.
Power required.....	3 to 4 H. P.
78F1470—Price, net, complete.	\$95.00



This Crusher consists of a stationary shell, in which a cone revolves on a vertical shaft. Both cone and shell are provided with teeth or sharp corrugations for breaking up the corn kernels and cob. The fineness of the product is regulated by raising or lowering the cone on its shaft by means of a lighter adjustment. Made very heavy to withstand hard usage

Furnished with Either Fine or Coarse Cone and Shell	
Size floor Plate.....	.24" x .24"
Height to top of shell.....	.39"
Size of Pulley.....	.20" x .8"
Number of cogs of pinion.....	.30
Number of cogs of gear.....	.45
Ratio Speed of Pulley to Speed of Cone.....	3 to 2
Speed of Pulleys.....	300 to 500 R. P. M.
Power required.....	8 horsepower
Weight.....	1000 lbs.
Capacity per hour (Coarse Crushing).....	.75 to 100 bu.
78F1472—Price, net, with Tight Pulley.....	\$155.00
78F1474—Price, net, with Tight and Loose Pulleys.....	165.00
State whether fine or coarse Cone and Shell is wanted.	
Cast Iron Hopper for No. 6 Mill, extra.....	\$15.00

"Kenyon" Corn and Cob Crusher



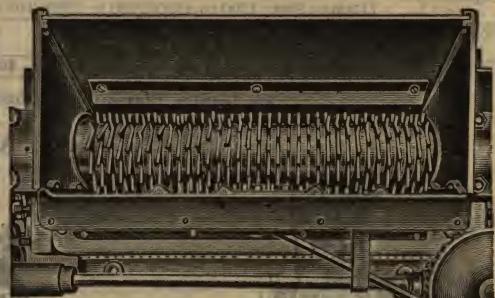
For Crushing Corn and Cob with or without husk for Roller, Attrition, or Buhr Mills.

The principle involved in this Crusher is different from that of the ordinary type of crusher. A number of circular saws with large projecting teeth are attached to the main shaft. The saws are separated and held in place by friction discs, which allow the saws to slip when striking hard particles. Hardened steel fingers between each saw, rip, shear and crush the corn as it passes from the hopper. An AGITATOR prevents the corn from bridging and clogging. THIS CRUSHER WILL CRUSH EITHER HARD OR SOFT, WET OR DRY CORN.

No better crusher made for this purpose. It will give long and continued service. THIS MACHINE IS A CRUSHER ONLY, for preparing corn and cob for grinding on roller, attrition, disc or stone buhr mills.

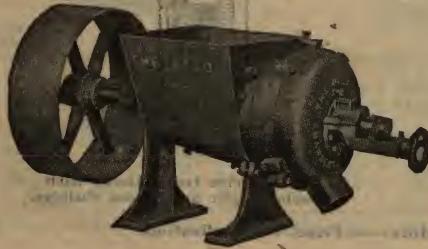
Furnished in left or right hand. Right hand always shipped unless otherwise ordered.

NET PRICES AND DIMENSIONS	
Number.....	.1
Length, over all, inches.....	.54 1/4
Width, over all, inches.....	.24
Length, base, inches.....	.36
Width, base, inches.....	.19
Hopper, inside, inches.....	.24 x 10
Driving Pulley, inches.....	.22 x 8
Speed, R. P. M.....	500 to 600
Horsepower.....	7 to 10
Capacity, bu., per hour.....	.75 to 100
78F Net price.....	\$200.00



Showing the Cutting Saws on the "Kenyon"

"Bison" Corn and Cob Crusher



Designed to Break Down Husked Ear Corn and Prepare It for Grinding on a Buhr, Disc or Roller Mill.

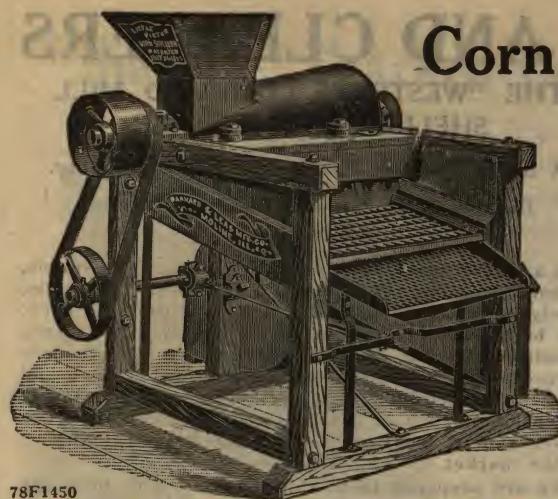
All parts are interchangeable and may be replaced at a slight expense.

78F1478

DIMENSIONS, NET PRICES, ETC.

Size	Capacity Bushels per Hr.	H. P. Required	Size Pulley	Speed R. P. M.	Wgt. Lbs.	Hgt. Over All	Lgth. Over All	Wdth. Over All	Net Price
Baby Bison	10 to 30	1 to 2	16x5	300 to 600	270	20"	41"	16"	\$60.00
Bison	25 to 75	2 to 5	18x6	300 to 600	350	21"	41"	18"	75.00

All Machines run with the Sun, facing Machine at pulley end.



78F1450

Corn Shellers and Cleaners

"LITTLE VICTOR" COMBINED SHELLER AND CLEANER

With Barnard-Cornwall's Patent Sieve—Capacities 60 to 150 bushels per hour.

This is a strictly first-class machine, made to meet the requirements of all wanting an outfit of small capacity, yet strong and durable.

The projections on the case are chilled. Everything about it is **strong and substantial**. The corn, after being shelled, passes through the sieve on the shaker, and is **thoroughly separated from cobs, husks, etc.**; it then passes into the last separation trunk and through a strong current of air, which takes out all chaff, silk and other light impurities.

We now furnish them with the **Barnard-Cornwall Patent Sieve**, which is guaranteed to prevent choking, and to clean better than any other sieve. Guaranteed to be one of the best combined corn shellers and cleaners of its capacity in the world.

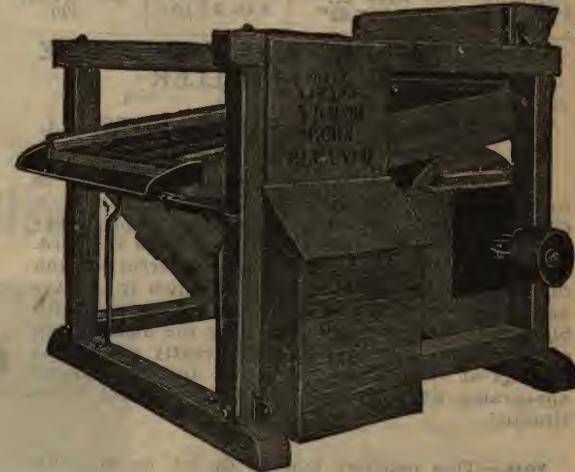
"LITTLE VICTOR" CLEANER

With Barnard-Cornwall Patent Finger Sieves—Two Sizes.
Capacities 60 to 150 bushels per hour.

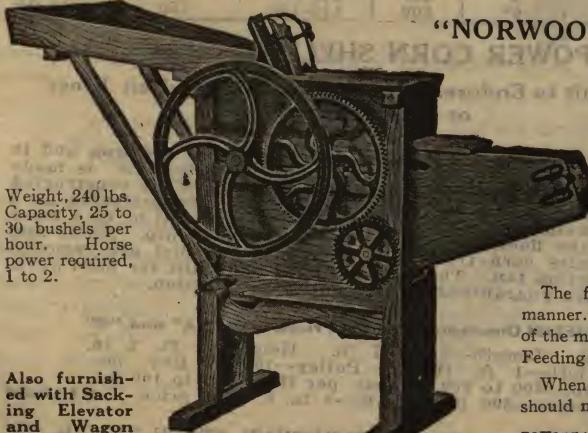
This machine is designed to clean shelled corn and other grains; to separate cobs from shelled corn, and clean the corn for market, and to be used as a receiving separator in small mills where there is not room to locate the ordinary sized receiving separator.

The grain is received in a hopper on top of the machine and passes through it to the sieve, through this sieve into the separating trunk, from which it issues clean, while the dust is discharged by the fan, out of doors. The corn sieve is **Barnard-Cornwall's Patent Finger Sieve**, which, in one operation, removes all the fine cob ends, and makes the corn perfectly clean for grinding into meal. We can furnish sieves for any kind of grain desired. As a corn cleaner of moderate capacity it has no equal, and is indispensable in a grist mill to clean the corn before grinding. The sieves are removable, and extra sieves can be furnished for handling different kinds of grain.

78F1452



Size	Height	Space on Floor Over All	Pulley Inches	Fan Opening Inches	Rev. per Min.	Wt. Lbs.	Capacity per Hour Bushels	Net Price with 1 Sieve	Extra Sieves Net Price	
									Regular	Cornwall
1	4 ft. 4 in.	4 ft. 9 in. x 4 ft. 5 in.	10x5	8½ x 9	800	650	60 to 75	\$ 96.00	\$ 4.40	\$ 7.80
2	4 ft. 7 in.	5 ft. 3 in. x 7 ft.	12x6	11x10	800	900	125 to 150	144.00	6.60	11.60



Weight, 240 lbs.
Capacity, 25 to 30 bushels per hour.
Horse power required, 1 to 2.

Also furnished with Sack-
ing Elevator
and Wagon Box Elevator,

"NORWOOD" SQUARE END TWO HOLE SHELLER

For Hand or Power—Strong and Durable

The sheller illustrated here is particularly adapted for general farm, warehouse or custom mill use, where large capacity is not needed. It is strongly constructed of good materials and nicely finished in every respect. The cob-carrier effectually separates the corn from the cobs, dropping the cobs at a distance from the rear frame and preventing corn being carried over with the cobs. Power and speed is transmitted to the different driving shafts by strong gearing, and there is no slipping.

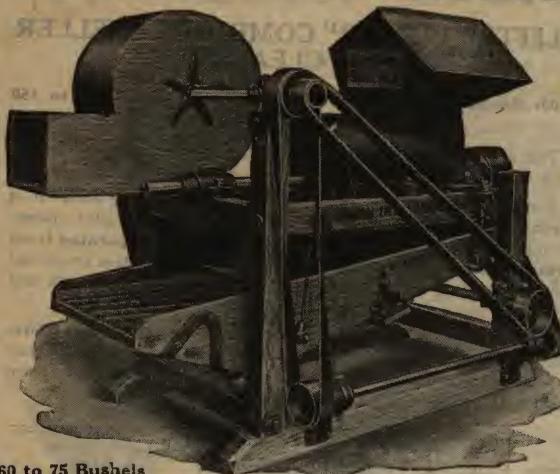
The heavy balance wheel assists greatly in keeping an even speed. The rag-irons and the springs are adjustable so the machine will shell clean, either large or small ears.

The fan and cob-carrier clean and separate the corn in the most perfect manner. A large feed table is firmly attached and strongly braced to the body of the machine. Feed spout is over the shelling wheels, which grip the ear firmly. Feeding is easy and positive.

When run by power, the pulley, which is 8 inches in diameter and 4-inch face, should make from 300 to 400 revolutions per minute.

78F1454 Price, with Fan, Feed Table, Cob-Carrier, Crank and Pulley, each \$25.50

POWER SHELLERS AND CLEANERS



60 to 75 Bushels Capacity

78F1460

THE "WESTERN" COMBINED MILL SHELLER AND CLEANER

A Small Capacity Machine of Highest Quality.

Durable—Efficient—Self-Feeding—Dustless and Noiseless

Is a perfect machine of small capacity. It is Simple, Strong, Durable, Self-Feeding, Dustless, Noiseless, Easily Adjusted to suit different conditions of corn; can be changed to run in either direction by simply crossing belt that drives counter shaft. The hopper is reversible. Shells the corn clean from the cob and cleans it perfectly with a suction fan; is small (see dimensions), runs at a low speed, requires but little power and is, in every respect, the best Mill Sheller in the market.

We are prepared to fit this machine with both ear corn and sacking elevators at an additional cost if desired.

DIMENSIONS, CAPACITY AND NET PRICE

Extreme Height 4 ft. 3 in.	Space on floor over all 4' 4" x 32"	Size Pulley 8 in. x 5 in.	Revolutions per Minute 600	Weight 650 Pounds	Capacity in Bushels per Hour 60 to 75	Horse Power 3 to 4	Net Price \$120.00
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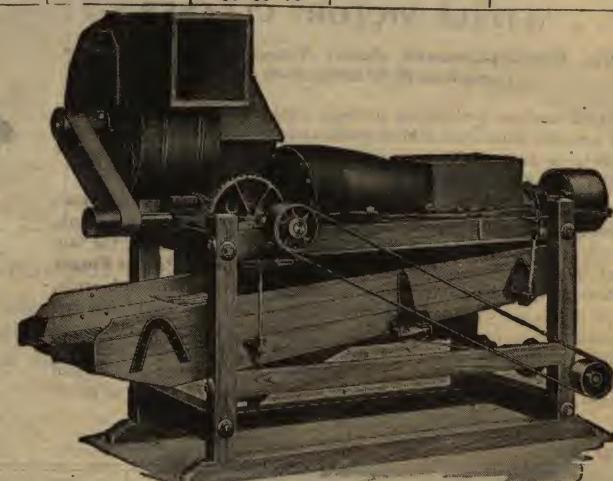
"WESTERN" REGULAR WAREHOUSE COMBINED SHELLER

POWERFUL SUCTION FAN REMOVES ALL DUST—CLEAN AND SANITARY

The "Western" Warehouse Combined Sheller is furnished with or without elevators, making a Combined Sheller and Cleaner for mills and elevators, where a sheller of small capacity is required. This machine is provided with a powerful suction fan, thereby keeping the room in which it is situated free from dust and dirt, as is not the case with blast fan machines. By depositing the dust on the outside of the building, we very greatly add to the comfort of owners and operatives, and the general appearance of the room in which the machine is situated.

Note.—This machine built with fan on opposite side when desired.

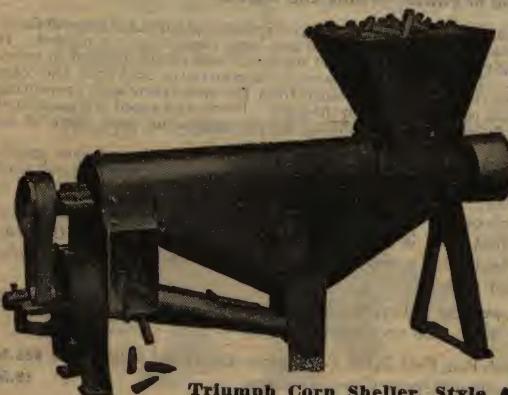
78F1462



Size	Extreme Height Over Fan	Extreme Height of Hopper	Space on Floor Over All	Size Pulleys		Rev. per Minute	Capacity per hour in bus.	Weight	Net Price Each
				Diam.	Face				
2½	5' 10"	4' 4"	8' 0" x 5' 4"	20"	8"	500	400-600	1400	\$400.00
4	5' 5"	3' 8"	7' 9" x 4' 10"	16"	8"	500	250-350	1100	325.00
4½	4' 9"	3' 0"	6' 7" x 4' 4"	10"	6"	600	175-225	850	250.00
5	4' 8"	2' 11"	6' 6" x 4' 3"	10"	6"	600	125-150	750	180.00

IMPROVED "TRIUMPH" POWER CORN SHELLER

Built to Endure. Two Styles—to Stand on Floor or to Hang from Ceiling



These Shellers are made entirely of steel and iron and in two different styles, viz., "A" and "B." Style "A" is made to rest on the floor or ground, and style "B" is constructed to fasten under the floor, and is generally preferred as a mill sheller for the reason that the hopper will be on a level with the floor and can be easily shoveled into. Shells and separates corn from cob. The dust and dirt are removed by suction fan. They are designed and built for hard work, and are guaranteed to give entire satisfaction.

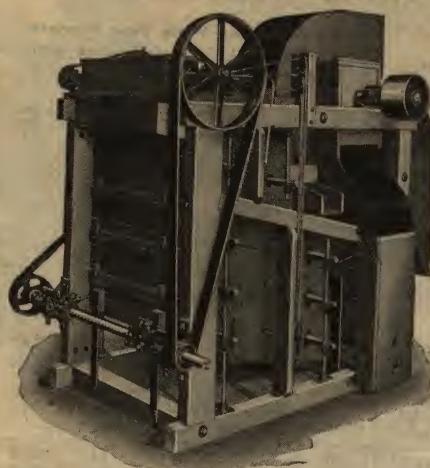
78F1464 Dimensions and Net Prices, Styles "A" and "B"

No. 2. Length—5 ft. 7 in. Height—2 ft. 2 in.
Width—1 ft. 10 in. Pulley—10 x 6. Rev. per
Min.—500 to 800. Capac. per Hour—75 to 100 bu.
Weight—600 lbs. H. P.—4 to 6. Net price....**\$115.00**

**BE SURE TO SPECIFY WHETHER STYLE "A" OR "B"
IS WANTED**

Triumph Corn Sheller, Style A

"Niagara" Cracked Corn Separator and Grader



This machine is designed for separating and grading cracked corn. It delivers the product in uniform clean grades, free from hulls, meal and dust. It contains four screens, all kept clean by automatic screen cleaners.

The cracked corn is delivered from the mill to the variable conveyor feeder. It then enters the first scalping screen which removes any large or uncracked kernels. It next passes the first main screen which removes the first or larger size, then to the second main screen which removes the second or next smaller size, and then to the third screen which removes the smallest or baby chick size. The corn meal passes through the last screen. All three grades of cracked corn have separate air aspirations, and are delivered at different points. The traveling brush screen cleaners are operated by chains and sprockets.

SIZES AND NET PRICES.

Number.....	0	1	3	5	7
Height, overall.....	78	78	90	99	105
Length, overall.....	" 86	86	97	116	128
Width, overall.....	" 56	62	78	90	96
Height to where Corn enters.....	" 64	64	78	84	90
Capacity per hour.....	bushels.. 40-60	65-85	100-125	165-185	200-275
78F1466—Net Price, complete	each.. \$406.00	\$475.00	\$640.00	\$900.00	\$1,125.00

Ideal Feed Mixer For Blending Dry or Wet Feeds



ing out whenever desired without taking the machine apart, which is a feature that will meet with the approval of every operator.

The Agitators turn opposite to each other and in a direction that will force the stock upward at the center.

SPECIFICATIONS.

Drive Pulley.....	.24 x 8"
Speed of Drive Pulley.....	.200 R. P. M.
Speed of Agitators.....	.90 R. P. M.
Horse-power required.....	15 to 20
Capacity per hour.....	7 to 12 tons.
Length over all.....	9'2 ³ / ₄ "
Width over all.....	2'9"
Length inside.....	7'
Height	3'8"
Net price, complete.....	\$550.00

This machine is designed for uniformly blending and mixing all kinds of sweet feeds and will give excellent results on soft, dry feeds, meals, grains, etc.

The action of the Agitator mixes the molasses uniformly thru the stock so that it is absorbed and results in a uniform product without balling or lumps and any desired percentage of molasses may be used.

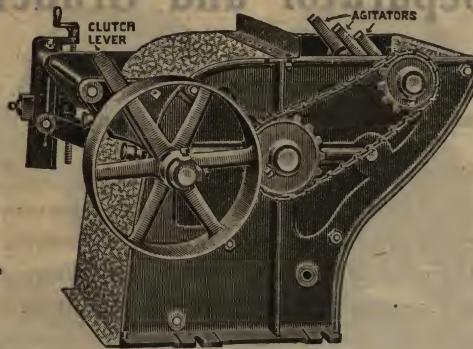
Extremely heavy and rigid is the construction of this machine to withstand the class of work it is to perform. The body is made of heavy gauge steel with solid cast-iron end pieces.

The Agitator arrangement allows clean-



"DRAVER" FEEDERS

"DRAVER" WING TYPE FEEDERS

Style
"A"**NOTE THE 4 IMPORTANT FEATURES:**

- 1st. Light running because the inlet is located on one side of the feeding cylinder, which is therefore not subjected to the weight of material in the bin.
- 2nd. Light running because the material is scooped up and carried over the full width of the feeder therefore no friction of material against the casing.
- 3rd. Feeds uniform and continuous because the feeding cylinder is built up of narrow sections, set spirally on the shaft.
- 4th. Complete with percentage valve if desired which is located in the lower section of the feeder.

78F1350

SIZES, DIMENSIONS AND PRICES OF WING TYPE FEEDERS Style "A"

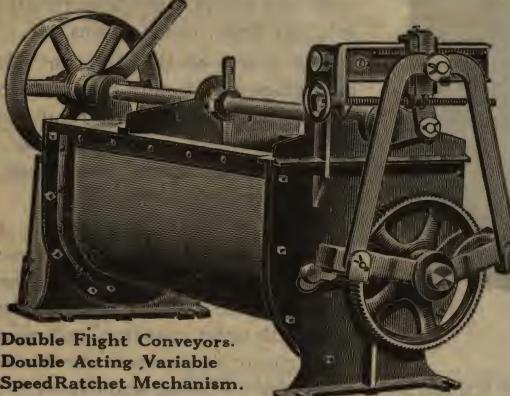
Number With Pct. Valves	Net Price	Number Without Pct. Valve	Net Price	Maximum Capacity Bushel Per Hour	Size of Inlet (Inches)	Length (Inches)	Width Overall (Inches)	High to Inlet (In) With Pct. Val.	Inlet (In) Without Pct. Val.	Size of Pulley
81	\$61.75	71	\$56.05	50	14x 7½	26	23	20	14	12x3
81B	66.50	71B	60.80	125	14x 7½	26	23	20	14	12x3
82	71.25	72	64.60	175	14x11	26	26½	20	14	12x3
82B	76.00	72B	69.35	250	14x11	26	26½	20	14	12x3
83	80.75	73	74.10	450	14x14½	26	30	20	14	12x3
83B	90.25	73B	82.65	650	14x14½	26	30	20	14	12x3
84	99.75	74	90.25	750	14x18	26	33½	20	14	12x3
84B	109.25	74B	99.75	850	14x21½	26	38	20	14	12x4
84S	118.75	74S	107.35	1000	14x25	26	41½	20	14	12x4
85	128.25	75	115.90	1200	14x28½	26	45	20	14	12x4
85B	137.75	75B	125.40	1350	14x32	26	48½	20	14	12x4
86	147.25	76	133.00	1500	15x35	26	51½	20	14	12x4
86B	156.75	76B	142.50	1650	15x38½	26	55	20	14	12x4
87	166.25	77	150.10	1800	15x42	26	58½	20	14	12x4
Sp. Salt Feeder	100	57.00	15	5½x7½	17	20	15	14	12x3	

Extra for Agitator \$3.00

Machines are regularly equipped with pulleys as listed. Can furnish 23 or 30 tooth No. 45 or 55 Sprocket if preferred.

Always state, when ordering, the kind of material to be handled, especially if grain or flour is to be fed.

Speed 40 R.P.M.

MODEL "J" DOUBLE ACTING FEEDER

Double Flight Conveyors.
Double Acting Variable
Speed Ratchet Mechanism.

Once adjusted to feed desired amount, requires no attention. A POSITIVE STREAM—cannot clog. Will blend or mix accurately practically every known kind of material, from flour to coal, crushed stone, etc. Made entirely of iron and steel.

Always state Material to be handled and approximate capacities per hour.

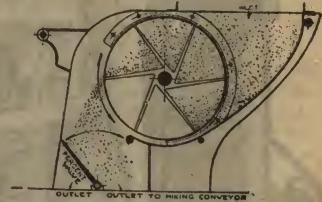
78F1353 SIZES, DIMENSIONS AND NET PRICES

Size No.	Net Price Each	Capacity Bushels Per Hr.	Size of Inlet	Height to Inlet	Size Over All	Size Pulley	Approx. Shipping Weight
0	\$28.50	10	4x10"	10"	11x33"	10x2"	100 lbs.
1	33.25	15	5x18"	10"	11x37"	10x2"	110 lbs.
2	42.75	45	7x15"	11"	13x40	12x3"	190 lbs.
2A	47.50	50	7x20"	11"	13x44	12x3"	200 lbs.
3	61.75	200	10x17"	14"	15x45	12x4"	210 lbs.
3A	71.25	250	10x27"	14"	15x52	12x4"	255 lbs.
4	152.00	400	13x20"	18"	19x54	13x5"	470 lbs.
4A	161.50	500	13x30"	18"	19x60	13x5"	500 lbs.
5	209.00	750	17x30"	24"	20x64	13x5"	645 lbs.
Salt	47.50	6	4x10"	10"	11x33"	10x2"	100 lbs.

Speed of Pulleys 40 to 50 R. P. M. Will Furnish 23 or 30 Tooth Sprocket, No. 45 or 55 in place of Pulleys at same price if ordered.

"DRAVER" WING TYPE FEEDERS

Showing Wing Type Feeders,
Sectional View of Feeders with
Percentage Valves.

**STYLE "A"**

For accurately regulating flow of all kinds of ground grain, alfalfa, meal, hulls, bran, etc. Feeds stock continuously; cannot bunch. Alfalfa or hulls fed absolutely accurately and just in same condition as received. Speed approximately 40 R. P. M.

POULTRY FEED AND GRAIN BLENDING FEEDERS**Style "B"**

A perfect wing type feeder for feeding and for blending cereals grains and poultry feeds, and which will feed granular material also.

The FEEDING OR MEASURING is the same as on the Style A feeder, except is furnished with discs between

the blades, (which are set spirally on the shaft), forming pockets, which keeps the stock flowing in an even stream, and is operated at variable speeds by an improved double acting clutch and any adjustment from maximum to minimum capacity can be made while the machine is running. By the use of percentage valves samples may be taken by simply throwing over the valve lever for a few seconds so the stock will run out through the valve instead of into the conveyor. Chaff, straws, strings, etc., will not hinder the regularity of the feed.

Light running, occupy small space and are equipped with clutch for starting and stopping. Any number of machines can be operated at the same time by the use of our adjustable one belt driving mechanism shown on the opposite page.

**SIZES, DIMENSIONS AND NET PRICES
Feeders With Percentage Valves**

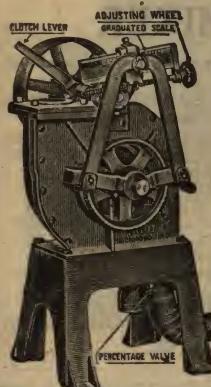
Size No.	Net Price Each	Capacity Bushel, Per Hour	Size Pulley	Height Where Grain Enters	Size of Inlet	Size on Floor Overall
51	\$47.50	1 to 150	12x3"	15 in.	5½x7½"	17x20"
52	57.00	2 to 300	12x3"	15 in.	5½x11½"	17x24"
53	66.50	4 to 400	12x3"	15 in.	5½x15¾"	17x30"
54	76.00	5 to 500	12x3"	15 in.	5½x20"	17x35"

78F1355 Feeders Without Percentage Valves.

31	\$38.00	1 to 150	12x3"	12 in.	5½x7½"	17x20"
32	47.50	2 to 300	12x3"	12 in.	5½x11½"	17x24"
33	57.00	4 to 400	12x3"	12 in.	5½x15¾"	17x30"
34	66.50	5 to 500	12x3"	12 in.	5½x20"	17x35"

Speed of Machines 40 R. P. M. 23 or 30 Tooth No. 45 Sprockets furnished in place of pulleys at same price if ordered.

Molasses Feeders and Feeder Drives



"DRAVER" MOLASSES FEEDER or REGULATOR

Uniformly regulates the flow of molasses in feed mixing plants and enables the operator to determine the exact amount being fed. Constructed entirely of iron and steel. The measuring wing has a double row of cups which gives a uniform discharge. It is driven by a double acting ratchet variable speed mechanism. Each feeder is equipped with a percentage valve to determine amount being fed.

Two types of feeders are furnished, one as illustrated with ratchet mechanism and the other driven with No. 1 variable speed drive shown below. All machines equipped with clutch for stopping and starting.

Can furnish all brass if desired.

Inlets threaded for 2½" pipe.

78F1356

DIMENSIONS AND PRICES WITH DRIVE MECHANISM ATTACHED

No.	Height to Inlet	Size Overall	Size Pulley	Speed of Drive Shaft	Net Price	Cap. per Minute
51	27"	15x16"	12x3"	45 R. P. M.	\$128.25	25 Gal.

DIMENSIONS AND PRICES WITH SEPARATE DRIVE MECHANISM

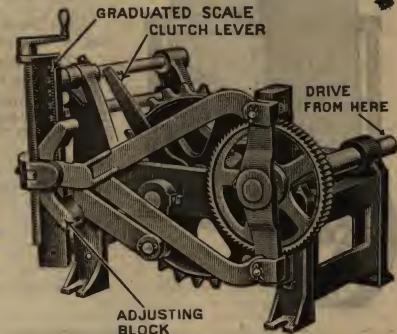
52	27"	15x16"	12x3"	45 R. P. M.	\$142.50	50 Gal.
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23 and 30 tooth sprockets for 45 chain can be furnished in place of pulleys at same price if desired.

"DRAVER" VARIABLE SPEED DRIVES

Designed to operate conveyors feeding from bins, tempering bin feeders or any apparatus where variable speed is required. Self contained, easily installed and require little space. Ratchet wheels and pawls made of special steel to insure long life.

Built in 3 sizes. No. 1 for light work such as driving short conveyors or a few feeders. No. 4 is built heavy enough for all ordinary work. The No. 6 is for very heavy duty. The No. 1 is a vertical drive type. The No. 4 (shown in the illustration) and No. 6 are horizontal types of same design.



78F1358

SIZES AND NET PRICES

No.	Net Price	Size of Pulley	Speed R. P. M.	Diam. of Sprocket Shaft
1	\$33.25	12x3"	25 to 50	1 1/8"
4	61.75	13x5"	25 to 50	1 1/2"
6	142.50	16x7"	25 to 60	2"

Sprockets can be furnished in place of pulleys at same price if desired.

ONE BELT DRIVES FOR "DRAVER FEEDERS" IN BATTERIES



Drive Without Speed Reducing Gears

Many times a miller has a battery of feeders all running perfectly and each delivering the exact percentage required. He may wish to increase or decrease the total output but to do this he would have to adjust each feeder separately and take new percentage tests, which would require a great deal of time. For this reason he often decides to let well enough alone even though the results obtained are not entirely satisfactory.

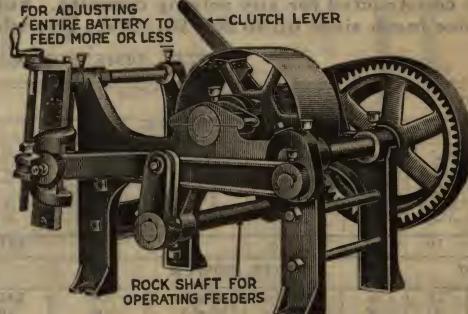
With the driving mechanisms here shown he can adjust, in one operation, the entire battery of feeders. The feeders can be regulated to feed more or less without altering the percentage at which feeder is set. In a half minute or less he can increase or decrease his total output anywhere from a few pounds to several tons.

78F1360

DRIVES WITHOUT SPEED REDUCING GEARS

No. 1-D for Driving Poultry Feeders without percent valve.	Pulley	Price
No. 2-D for Driving Poultry Feeders with percent valve.	6"x16"	
No. 3-D for Driving 2 to 4 small Wing Type Feeders Style "A" with percent valve.	6"x16"	\$95.00
No. 4-D for Driving 2 to 4 large Wing-Type Feeders Style "A" without percent valve.	6"x16"	
No. 5-D for Driving large battery of Poultry Feeders with percent valve.	7"x18"	
No. 6-D for Driving large battery of Wing-Type Feeders Style "A" with percent valve.	8"x18"	\$128.25

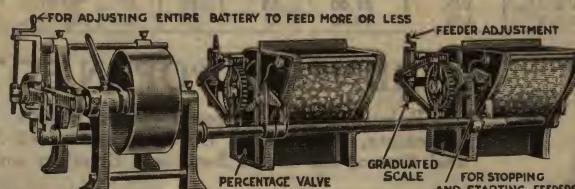
Speed of Drive Pulley 40 to 45 R. P. M.



Drive With Speed Reducing Gears

The mechanism is simple. One crank on the driving mechanism operates the entire battery of feeders. Each feeder can be stopped, started and adjusted independently from the others.

The drive shaft is mounted on bearings on and near the base of the feeders leaving a free passage between the machines.



Clutch on the driving mechanism for stopping and starting entire battery or each feeder may be stopped or started independently by its own clutch.

Made in two styles as shown, with and without speed reducing gears.

78F1362

DRIVES WITH 3 TO 1 SPEED REDUCING GEARS

No. 12 for Driving Poultry Feeders without percent valve.	Pulley	Price
No. 14 for Driving Poultry Feeders with percent valve.	12"x5"	
No. 16 for Driving 2 to 4 small Wing-Type Feeders Style "A" with percent valve.	12"x5"	\$118.75
No. 18 for Driving 2 to 4 large Wing-Type Feeders Style "A" without percent valve.	12"x5"	
No. 20 for Driving large battery of Poultry Feeders with percent valve.	14"x7"	
No. 22 for Driving large battery of Wing-Type Feeders Style "A" with percent valve.	14"x7"	\$156.75

Speed of Drive Pulley 135 R. P. M.

"GARDNER'S" FEEDERS AND MIXERS

"GARDNER'S" FEEDER AND MIXER



This Feeder and Mixer is equipped with a new, improved Feed-gate setting device, by which the machine can be instantly adjusted to feed any desired quantity.

There are many imitations of this machine. If you want the GENUINE GARDNER, buy none unless it has the name Gardner and the New Improved Feed-gate setting device on the machine.

These machines are also used in connection with the combined sifter and mixer for the purpose of feeding the desired proportions of the different kinds of material to be mixed. They can be regulated to feed from 5 pounds to 10 barrels per hour. It requires one feeder for each kind of material to be mixed.

78F1401

DIMENSIONS, NET PRICES, ETC.

Size	Space Occupied, Inches	Capacity per Hour	Net Price
1	18 in. x 20 in. x 28 in. high	5 lbs. to 10 bbls.	\$14.75
2	23 in. x 23 in. x 30 in. high	8 lbs. to 15 bbls.	16.50

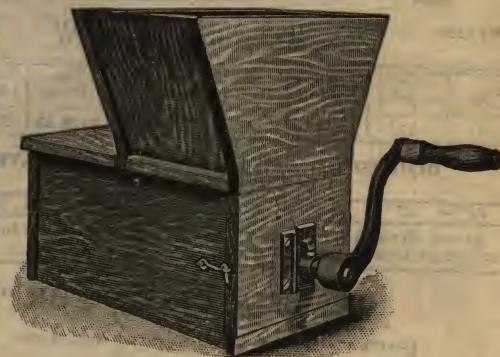
Pulleys—12 x 2—Speed 50 R. P. M.

"GARDNER'S" PATENT RAPID SIFTER

Fitted with patent designed brush in adjustable bearings. Will sift any kind of dry powder; also reduce any that may have become lumpy, such as tartaric acid, bicarbonate of soda, sulphate of magnesia, arrowroot, icing sugar, sulphur, flour, colors, etc., at one operation.

The spout at tail end of sifter is provided for automatically throwing out all hard foreign matter, thus preventing damage to the sieve through choking up, or the necessity of taking the whole machine apart to clean this out, as with other makes of machines. Any number of sieves can be supplied to suit special cases.

This style machine can be placed over trough, bin, spout, or other place desired, or can be furnished with a reserving box or drawer, and is constructed for any mixing capacity. Furnished with any size mesh sieve up to No. 60. State size when ordering.



SIZES, DIMENSIONS, CAPACITIES AND NET PRICES

78F1403

FOR HAND

Size	Length of Cylinder, Inches	Diameter of Cylinder, Inches	Capacity per Hour	Size of Pulley, Inches	Shipping Weight, Lbs.	Net Price, Each
B	16	6	4 bbls.	.....	50	\$31.50

78F1407

FOR POWER

D	24	8	7 bbls.	10 x 3	100	\$45.00
E	30	8	10 bbls.	10 x 3	100	49.50
F	30	10	24 bbls.	12 x 3½	125	63.00
G	36	10	30 bbls.	12 x 3½	125	81.00
H	36	12	40 bbls.	14 x 4	150	90.00

78F1405

FOR HAND

Size	Length of Cylinder, Inches	Diameter of Cylinder, Inches	Capacity per Hour	Size of Pulley, Inches	Shipping Weight, Lbs.	Net Price, Each
C	20	6	6 bbls.	.....	75	\$36.00

78F1409

FOR POWER

I	42	12	50 bbls.	14 x 4	200	\$ 99.00
J	42	14	60 bbls.	15 x 5	250	103.50
K	42	16	70 bbls.	15 x 5	250	112.50
M	48	18	90 bbls.	18 x 6	350	135.00
O	48	20	120 bbls.	24 x 6	400	162.00

"GARDNER'S" "OPEN BOTTOM" SIFTER

For Bakers, Millers, Flour Dealers, Hotels, Restaurants, Druggists, Chemists, Perfumers, Etc.—Rapid and Accurate—Built Heavy and Strong for Hard Service—Brushes and All Parts Adjustable.

This is a very popular sifter because it is equipped with an open bottom and because it is adjustable everywhere so that the best work can be done at all times. Its durability is another strong feature, for it is built to give long service under the most severe strain. Like all other Gardner products, it is unexcelled for the purpose for which it is designed. It cannot fail to give most satisfactory service.

The iron shaft runs entirely through the sifting cylinders, and is made extra heavy and strong. The brushes may be raised or lowered to suit the operator.

Extra heavy and strong, bound with heavy band iron. The brushes and all parts are adjustable. Tight and loose pulleys, together with fasteners and screws, are furnished with each machine.

Furnished with any number of mesh wire sieve up to and including No. 60. Mention size mesh desired for sieve when ordering. An extra charge for sieves finer than No. 60 will be made.

SIZES, DIMENSIONS, CAPACITIES AND NET PRICES

78F1411

FOR HAND

Size	Length of Cylinder Inches	Diameter of Cylinder Inches	Capacity	Net Price
1	16	8	1 bbl. 5 min.	\$21.60
2	22	8	1 bbl. 3 min.	28.80
3	26	8	1 bbl. 2 min.	36.00

78F1413

FOR POWER

Size	Length of Cylinder Inches	Diameter of Cylinder Inches	Capacity	Net Price
4	26	10	1 bbl. per min.	\$63.00
5	36	12	2 bbl. per min.	90.00
6	48	12	4 bbl. per min.	135.00



Pulleys for Hand Machines Extra.

"Gardner's" Patent Feeders and Mixers

"Gardner's" Patent Combined "Rapid" Sifter and Mixer



This is without doubt the most perfect machine of its kind on the market. For grocers, coffee and chicory merchants, confectioners, chemists, druggists, perfumers, makers of self-rising, baking, tooth, Seidlitz, condition and plate powders, snuff, cattle and poultry foods, spices, colors, etc. Suitable for all work where dry and lumpy ingredients are to be thoroughly broken up, sifted and blended together in one operation.

Furnished with any size mesh up to 60 mesh. Finer mesh at extra charge. Pulleys for power at extra charge.

SIZES, DIMENSIONS, CAPACITIES AND NET PRICES

78F1414

HAND POWER

Size	HAND POWER														
	Extreme Length	Extreme Width	Extreme Height	Diameter of Cylinder	Length of Cylinder	Capacity in Flour per Charge	Capacity Continuous Flow per Hour	Diameter of Brush	Length of Brush	Height to Center of Pulley	Capacity in Flour	Capacity Continuous Flow per Hour	Diameter of Cylinder	Shipping Weight	Net Price, Each with Sifter	Net Price, Each without Sifter
AA	2-4	1-4	2-5	9	1-4	20	2	4	100	\$54.00	\$45.00				
A	2-8	1-10	3-3	12	1-4	30	4	6	120	67.50	54.00				
B	3-8	1-10	3-3	12	2-4	50	6	6	175	81.00	72.00				

"GARDNER'S" PATENT COMBINED "RAPID" SIFTER AND MIXER

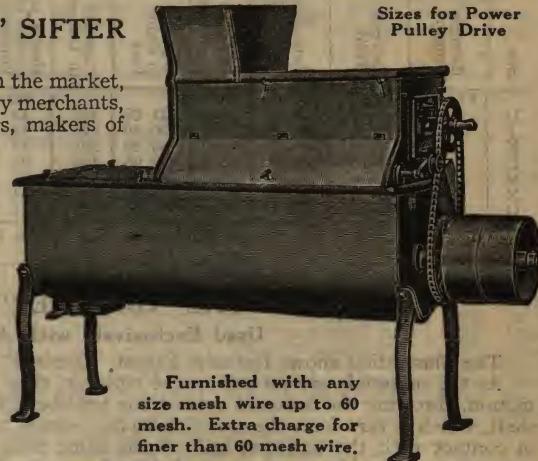
Sizes for Power Pulley Drive

This is without doubt the most perfect machine of its kind on the market, and supplies a long-felt want for bakers, grocers, coffee and chicory merchants, confectioners, manufacturing chemists and druggists, perfumers, makers of self-rising, baking, tooth, Seidlitz, condition and plate powders, snuff, cattle and poultry foods, spices, colors, etc. It is suitable for any sifting and mixing where dry and lumpy ingredients are to be thoroughly broken up, sifted and blended together quickly and in one operation.

State size mesh wire sieve wanted when ordering.

IMPORTANT!

An ounce or less of any one powder can be mixed with pounds or hundredweights of any other, the whole being very thoroughly blended before leaving the mixing chamber. This is being constantly proven by many firms who put the blended powders to severe analytical tests.



Furnished with any size mesh wire up to 60 mesh. Extra charge for finer than 60 mesh wire.

78F1416

SIZES, DIMENSIONS, CAPACITIES AND NET PRICES

Size	SIZES, DIMENSIONS, CAPACITIES AND NET PRICES															
	Extreme Length	Extreme Width	Extreme Height	Diameter of Cylinder	Length of Cylinder	Capacity in Flour per Charge	Capacity Continuous Flow per Hour	Diameter of Brush	Length of Brush	Height to Center of Pulley	Size of Pulley R. P. M.	Speed, R. P. M.	Horse Power	Shipping Wt., Lbs.	Net Price, Plain Iron	Net Price, Galvanized Iron
C	ft. in.	ft. in.	ft. in.	in.	ft. in.	lbs.	bbls.	in.	in.	in.	3 x 12	50	1 1/4	350	\$112.50	\$126.00
D	4-0	2-2	4-11	14	2-6	75	8	22	29	4 x 14	45	1	450	144.00	162.00	
E	4-10	2-2	4-11	14	3-4	100	10	24	29	4 x 14	45	1	500	162.00	180.00	
F	6-6	2-2	5-0	14	5-0	150	20	30	29	5 x 18	40	2	700	189.00	216.00	
G	5-9	2-0	5-3	18 1/2	4-0	200	25	10	30	5 x 20	40	2	900	225.00	252.00	
H	7-8	2-0	5-3	18 1/2	5-10	300	35	12	36	6 x 20	35	2 1/2	1000	270.00	306.00	
I	7-2	2-10	5-9	22 1/2	5-0	400	45	12	42	6 x 20	35	3	1450	292.50	337.50	

NOTE—We can furnish machines with capacity up to 200 barrels (continuous flow) per hour. Price and description on application



A Perfect Mixture.
Guaranteed
Satisfactory.

THE "GARDNER" MIXER

SIZES FOR POWER—PULLEY DRIVE.

This machine is especially adapted for work where no sifting but where a thorough mixing and blending is required. In construction, it is exactly like the combined sifter and mixer above without a sifter. The Gardner Patent Agitator, illustrated and described on page 76, thoroughly mixes and blends the ingredients together so that a perfect mix is assured, even though the proportion of the blend may be one to one hundred parts. Built heavy and strong for severe usage. Equipped with tight and loose pulleys. These mixers are equipped with hinged wood top, unless iron is specified.

78F1418

SIZES, DIMENSIONS, CAPACITIES AND NET PRICES.

Size	SIZES, DIMENSIONS, CAPACITIES AND NET PRICES.														
	Extreme Length	Extreme Width	Extreme Height	Diameter of Cylinder	Length of Cylinder	Capacity in Flour per Charge	Capacity Continuous Flow per Hour	Height to Center of Pulley	Size of Pulley	Pulley Speed, R. P. M.	Horse-Power	Shipping Weight	Net Price, Plain Iron	Net Price, Galvanized Iron	
C	ft. in.	ft. in.	ft. in.	in.	ft. in.	lbs.	bbls.	in.	in.	12 x 3	50	1 1/4	200	\$ 99.00	\$112.50
D	3-9	2-2	3-3	14	2-6	75	8	29	14 x 4	45	1	350	108.00	126.00	
E	4-6	2-2	3-3	14	3-4	100	10	29	14 x 4	45	1	425	117.00	135.00	
F	6-3	2-2	3-5	14	5-0	150	20	27	18 x 5	40	2	600	135.00	157.50	
G	5-6	2-0	3-2	18 1/2	4-0	200	25	27	20 x 5	40	2	700	180.00	207.00	
H	7-4	2-0	3-2	18 1/2	5-10	300	35	28	20 x 6	35	2 1/2	850	216.00	252.00	
I	7-0	2-10	3-6	22 1/2	5-0	400	35	28	20 x 6	35	3	1450	292.50	337.50	

"Gardner's" Patent Sifters and Mixers

"GARDNER'S" PATENT "RAPID" MIXER

Furnished Either With or Without Sifter.



78F1420

SIZES, DIMENSIONS, CAPACITIES AND NET PRICES

Size	Extreme Length	Extreme Width	Extreme Height	Capacity in Flour Per Charge	Capacity in Cubic Feet	Capacity in Gallons	Height to Center of Pulleys	Size of T. & L. Pulleys	Pulley Speed R. P. M.	Horse Power	Shipping Wt. Without Sifter	Lbs. With Sifter	Net Price Plain Iron Without Sifter	Net Price Plain Iron With Sifter	Net Price Galv. Iron Without Sifter	Net Price Galv. Iron With Sifter
J	Ft. In.	Ft. In.	Ft. In.	Lbs.		In.										
J	11-7	3-4	5-4	600	21.98	165	18	22x5	120	2	1300	1650	\$328.50	\$382.50	\$378.00	\$432.00
K	12-7	3-6	5-7	800	30.40	225	18	24x5	100	3	1500	1800	387.00	427.50	450.00	495.00
L	12-8	4-0	6-0	1000	39.20	295	18	24x5	100	3	1800	2000	463.50	499.50	531.00	567.00
M	12-6	4-10	6-9	1500	52.95	400	24	30x6	80	4	2300	2500	540.00	594.00	598.50	652.50
N	15-0	4-10	6-9	2000	70.60	525	24	30x6	80	5	3000	3200	621.00	675.00	688.50	742.50
O	15-2	5-3	7-8	3000	96.20	720	24	30x6	75	8	4500	4800	855.00	900.00	945.00	990.00
O	16-f.	6-0	8-8	4000	125.65	940	24	30x8	75	10	6000	6400	945.00	1080.00	1035.00	1170.00

Sizes, Dimensions and Horse Power are for Sifter and Mixer Combined.

THE "GARDNER" PATENT AGITATOR

Used Exclusively with All Types of Gardner Mixers.

The illustration shows the new Patent "Gardner" Agitator, with the improved hold-back flights. As the materials are turned by the agitator, they come in contact with the baffle plates, that tend to retard the motion, throwing the contents against the hold-back flights on the shaft, which in turn force the materials to the outside, to again come in contact with the agitator, and at the same time prevent the contents from packing at the end of the mixing chamber.

The new hold-back flights we regard as one of the most important improvements, as so much complaint has been made about other machines not properly mixing the materials next to and around the shaft.

We claim a decided advantage over other machines in this agitator.



"GARDNER'S" PATENT COMBINED "RAPID" SIFTER AND MIXER

No Better Sifter and Mixer on the Market.

This Sifter and Mixer is constructed in the same general way as the No. 78F1416, shown on page 75. It has the same popular mixing features which have made the Gardner line so popular for its accuracy and durability. This machine is built very heavy and strong, and has, in addition to the features of the other sifters, a porcelain lined mixing chamber and a galvanized agitator. It is built to meet the requirements of those manufacturers who desire the BEST MACHINE THAT CAN BE MADE for the purpose of sifting and mixing materials of a powdery or granular nature, such as flour, baking powder, tooth powder, face, Seidlitz, or condition powders, sugar, powdered licorice, drugs, snuff, and all ingredients of similar nature. The illustration shows the machine open for cleaning.

78F1422

DIMENSIONS AND NET PRICES OF PORCELAIN LINED MACHINES

Size	Extreme Length	Extreme Width	Extreme Height	Capacity Flour per Charge	Capacity Contin. Flow	Height to Center of Pulley	Size of Pulley	Pulley Speed R. P. M.	Horse Power	Shipping Weight	Net Prices Enamelled Iron Bottom Galvanized Agitator, Wooden Sides
Q	Ft. In.	Ft. In.	Ft. In.	Lbs.	Bbls.	In.	In.				
R	5-8	3-10	1-9	100	6	15 $\frac{1}{2}$	14 x 4	40	2	450	\$157.50
S	6-6	4-0	1-9	200	10	15 $\frac{1}{2}$	14 x 4	35	2 $\frac{1}{2}$	700	216.00
T	6-4	2-9	5-9	400	25	18	20 x 6	30	4	850	315.00
	7-4	2-9	5-9	500	35	18	20 x 6	30	4 $\frac{1}{2}$	1200	382.50

These prices here given include pulleys and all complete, including any mesh wire sieve up to No. 60. State size wanted when ordering.

FANS, BLOWERS AND EXHAUSTERS



Volume Exhauster
Showing Inlet and Discharge Outlet

"Buffalo" (Volume) Blowers and Exhausters

BLOWERS have both sides open, with bearings on each side. They are especially adapted to blowing forge and boiler-fires, heating and puddling furnaces, etc.

EXHAUSTERS have but one inlet, the side upon which both bearings are placed, being closed.

This allows of a pipe being connected with the unobstructed inlet for the removal of dust from emery, buffing and sandwheels, of smoke, fumes or hot air from rooms, and for general exhausting purposes where a pipe connection with inlet is desired.

These blowers and exhausters are built with all possible care, and are thoroughly tested before leaving the works.

All sizes of Blowers and Exhausters are REGULARLY BUILT TO DISCHARGE HORIZONTALLY AT THE BOTTOM, and when only one pulley is



Volume Blower
Right Hand Bottom
Horizontal Discharge

used it is placed, as one stands facing the outlet, on the RIGHT HAND side, and is designated as RIGHT HAND.

ALL BLOWERS AND EXHAUSTERS ARE FURNISHED WITH THE BOTTOM HORIZONTAL DISCHARGE UNLESS A SPECIAL DISCHARGE IS SPECIFIED, FOR WHICH AN EXTRA TEN PER CENT IS CHARGED.

The different discharges are bottom or top horizontal, up blast or down blast. Angular discharges may also be had. There is no extra charge for left hand blowers or exhausters, providing the discharge remains standard viz., bottom horizontal discharge.

Suction Fan
FOR TAKING HOT AIR FROM
ROLLER MILLS



For taking hot air from the rolls, having a trunk to connect with the spout that is attached to the rolls. A spout can be attached to the fan mouth to deliver the hot air to the dust collector. The 22" size is suitable for three to four double stands of rolls; 26" size for four to six; 32" size for six to ten; and 42" size for ten to fourteen. Speeds below are figured for $\frac{3}{4}$ oz. pressures.

78E1780
Dimensions, Capacities, Weights and Net Prices

Size...	22"	26"	32"	42"	
Ex-tre-me	Height.... Width.... Length.... Pulley Diameter Face.... Revolutions.... Weight.... Fan Width.... Op'g Depth.... Net price....	2' 5" 2' 2" 2' 10" 6" 4" 760 120 8 1/2" 9" \$45.00	2' 9" 2' 6" 3' 2" 6" 4" 530 140 11" 10" \$55.00	3' 3" 3' 0" 3' 2" 6" 4" 415 160 12" 12" \$65.00	3' 9" 3' 1" 3' 7" 7" 5" 415 180 12" 15 1/2" \$75.00

78E1784 Dimensions, Speeds, Air Delivery Per Minute and Net Prices

Size No.	H'ght Inches	Outside Dimensions			Pulley	Capacity at 2-oz. Pressure		Capacity at 4-oz. Pressure		Wt. Lbs.	Net Price, Each
		Diam. Outlet	Dia. Inlet	Dia. Face		R.P. M.	Cap.	R.P. M.	Cap.		
0B	14 3/4	5 1/2	5 1/2	2 3/4	2 1/4	.....	.....	.....	.....	45	\$ 23.00
1B	15 7/8	4 7/8	5 1/4	3	2 1/2	3393	210	4824	298	60	30.00
2B	20 1/2	6 1/2	6 1/2	3 1/4	2 5/8	2800	534	3977	753	100	38.00
3B	25	7 1/2	7 1/2	4	3	1965	888	2794	1261	170	54.00
4B	28	9	5	4	1724	1174	2452	1667	200	66.00	
5B	31 1/8	10 1/8	10 1/8	5 1/4	4 1/2	1556	1688	2212	2397	275	83.00
6B	37 1/2	11 1/8	12 1/8	6 1/2	5 1/4	1274	2382	1809	3382	380	105.00
7B	42 5/8	14	14	7 1/2	6 1/2	1168	2752	1660	3908	575	135.00
8B	47	16 1/8	16	8 1/2	7 1/2	1001	3983	1422	5656	725	225.00
9B	55	17 1/8	17 1/4	9 1/2	8 1/4	824	6641	1171	9431	1100	300.00
10B	68 3/8	21	21	12	9 1/2	702	9003	966	12786	1600	375.00
11B	78 1/4	24 1/2	24 1/2	14	11	.....	.....	.....	.....	3200	525.00

Note.—State which is wanted, Blower or Exhauster.

"BUFFALO" STEEL PLATE PLANNING MILL EXHAUSTERS

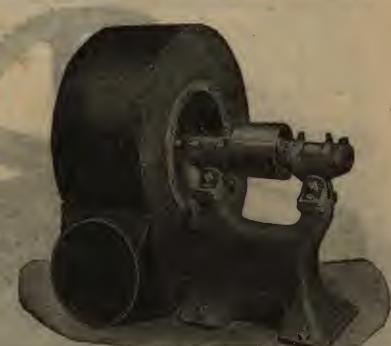
As indicated by the name, the most common application of this type of fan is for the purpose of exhausting shavings, sawdust and refuse from wood-working machines of all types. They are constructed of heavy steel plate firmly braced with angle iron and guaranteed to their maximum capacity.

These Exhausters have reversible housing, adjustable to either hand and to any direction of discharge.

Note.—In ordering always mention whether RIGHT or LEFT HAND fan is desired and style of discharge—bottom horizontal, top horizontal, up or down blast.

The style shown in cut above is considered regular and will be sent unless otherwise ordered. OUTLET ROUND INSTEAD OF SQUARE.

Price and Table of Dimensions and Speeds, with Air Deliveries in Cubic Feet per Minute
78E1782



Right Hand Bottom Horizontal Discharge

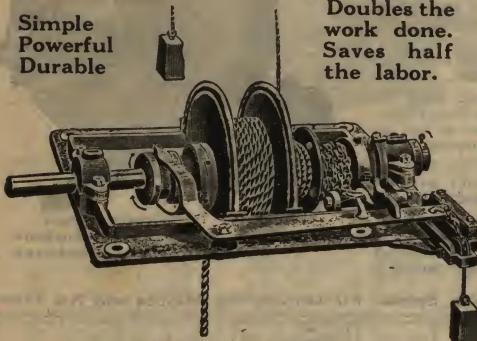
Size	H'ght Inches	Outside Dimensions			Pulley	Capacity at 2-oz. Pressure		Capacity at 3-oz. Pressure		Wt. Lbs.	Net Price, Each					
		Diam. Outlet	Dia. Inlet	Dia. Face		R.P. M.	Cap.	R.P. M.	Cap.							
Ex-tre-me	Height.... Width.... Length.... Pulley Diameter Face.... Revolutions.... Weight.... Fan Width.... Op'g Depth.... Net price....	2' 5" 2' 2" 2' 10" 6" 4" 760 120 8 1/2" 9" \$45.00	2' 9" 2' 6" 3' 2" 6" 4" 530 140 11" 10" \$55.00	3' 3" 3' 0" 3' 2" 6" 4" 415 160 12" 12" \$65.00	3' 9" 3' 1" 3' 7" 7" 5" 415 180 12" 15 1/2" \$75.00	25	28 1/2	10"	5	4	1758	1682	2153	2060	250	\$110.00
	Width.... Length.... Pulley Diameter Face.... Revolutions.... Weight.... Fan Width.... Op'g Depth.... Net price....	2' 2" 2' 10" 6" 4" 760 120 8 1/2" 9" \$45.00	2' 6" 3' 2" 6" 4" 530 140 11" 10" \$55.00	3' 0" 3' 2" 6" 4" 415 160 11" 10" \$65.00	30	32 1/4	12"	12	6 1/2	1450	2340	1775	2550	330	\$125.00	
	Width.... Length.... Pulley Diameter Face.... Revolutions.... Weight.... Fan Width.... Op'g Depth.... Net price....	2' 10" 3' 2" 6" 4" 760 120 8 1/2" 9" \$45.00	3' 2" 3' 0" 6" 4" 530 140 11" 10" \$65.00	3' 2" 3' 0" 6" 4" 415 160 11" 10" \$65.00	35	36 1/4	14"	14	7 1/2	1260	3250	1540	3975	420	\$150.00	
	Width.... Length.... Pulley Diameter Face.... Revolutions.... Weight.... Fan Width.... Op'g Depth.... Net price....	3' 2" 3' 0" 6" 4" 760 120 8 1/2" 9" \$45.00	3' 0" 3' 2" 6" 4" 530 140 11" 10" \$65.00	3' 0" 3' 2" 6" 4" 415 160 11" 10" \$65.00	40	39 1/8	16"	16	8 1/2	1090	4250	1344	5190	600	\$200.00	
	Width.... Length.... Pulley Diameter Face.... Revolutions.... Weight.... Fan Width.... Op'g Depth.... Net price....	3' 0" 3' 2" 6" 4" 760 120 8 1/2" 9" \$45.00	3' 2" 3' 0" 6" 4" 530 140 11" 10" \$65.00	3' 2" 3' 0" 6" 4" 415 160 11" 10" \$65.00	45	43 1/2	18"	18	9 1/2	976	5410	1195	6620	800	\$250.00	
	Width.... Length.... Pulley Diameter Face.... Revolutions.... Weight.... Fan Width.... Op'g Depth.... Net price....	3' 2" 3' 0" 6" 4" 760 120 8 1/2" 9" \$45.00	3' 0" 3' 2" 6" 4" 530 140 11" 10" \$65.00	3' 0" 3' 2" 6" 4" 415 160 11" 10" \$65.00	50	47 1/4	20"	20	10 1/2	880	6720	1078	8220	900	\$290.00	
	Width.... Length.... Pulley Diameter Face.... Revolutions.... Weight.... Fan Width.... Op'g Depth.... Net price....	3' 0" 3' 2" 6" 4" 760 120 8 1/2" 9" \$45.00	3' 2" 3' 0" 6" 4" 530 140 11" 10" \$65.00	3' 2" 3' 0" 6" 4" 415 160 11" 10" \$65.00	55	51	22"	22	11 1/2	806	8120	987	9950	1200	\$360.00	
	Width.... Length.... Pulley Diameter Face.... Revolutions.... Weight.... Fan Width.... Op'g Depth.... Net price....	3' 2" 3' 0" 6" 4" 760 120 8 1/2" 9" \$45.00	3' 0" 3' 2" 6" 4" 530 140 11" 10" \$65.00	3' 0" 3' 2" 6" 4" 415 160 11" 10" \$65.00	60	54	24"	24	12 1/2	735	9750	900	11950	1600	\$450.00	
	Width.... Length.... Pulley Diameter Face.... Revolutions.... Weight.... Fan Width.... Op'g Depth.... Net price....	3' 0" 3' 2" 6" 4" 760 120 8 1/2" 9" \$45.00	3' 2" 3' 0" 6" 4" 530 140 11" 10" \$65.00	3' 2" 3' 0" 6" 4" 415 160 11" 10" \$65.00	70	60 1/4	28"	28	14 1/2	637	13300	780	16300	2200	\$600.00	
	Width.... Length.... Pulley Diameter Face.... Revolutions.... Weight.... Fan Width.... Op'g Depth.... Net price....	3' 2" 3' 0" 6" 4" 760 120 8 1/2" 9" \$45.00	3' 0" 3' 2" 6" 4" 530 140 11" 10" \$65.00	3' 0" 3' 2" 6" 4" 415 160 11" 10" \$65.00	80	64 1/4	32"	32	16 1/2	552	17280	676	21200	2800	\$700.00	

POWER SHOVELS AND CAR PULLERS

"CLARK" AUTOMATIC POWER GRAIN SHOVELS

The Outfit Pays for Itself Many Times in Time Saved—Saves a Great Amount of Hard Work

Simple
Powerful
Durable



Doubles the work done.
Saves half the labor.



Hickory Handle I
Wooden Scoop.



Wooden Scoop for Power
Grain Shovel



Pedestal Sheave.



Car Door Sheave, A.



Car Door Sheave, B.



Floor Swivel Sheave.

With a single machine one man can unload a carload of wheat or small grain in fifteen minutes; with a pair of machines, two men can unload a car in five to seven minutes.

The illustration shows one of our Single Clark Automatic Power Shovels. They are generally used in pairs, both being placed on the same shaft, side by side. They are perfectly automatic in action and may be adjusted to throw in or out of gear at any desired point.

The price list includes the following fixtures with each single shovel: One scoop, 35 feet of rope, scoop chain, two horizontal sheaves, one swivel sheave and shaft with sufficient projection to receive driving pulley. An extra charge is made for the driving pulley, the amount depending upon the size required. Speed 60 to 65 R. P. M.

NET PRICE

78F1503	Single Shovel, complete.....	Each	\$175.00
78F1504	Double Shovel, complete.....	Each	350.00

Net Price—Appliances Used with Power Shovels

78F1505	Wooden Scoops, for grain.....	Each	\$5.50
78F1506	Wooden Scoops, for ear corn	Each	20.00
78F1507	Wooden Handles (hickory).....	Pair	2.25
78F1509	Scoop Chains.....	Each	3.00
78F1510	Malleable Hooks.....	Each	.75
78F1511	Adjustable Pedestal Sheaves	Each	16.50
78F1512	Floor Swivel Sheaves.....	Each	7.50
78F1513	Car Door Sheaves, Style "B"	Each	9.00
78F1514	Car Door Sheaves, Style "A" double.	Each	9.00
78F1515	Car Door Sheaves, Style "A" single.	Each	12.00

"SPECIAL" SELF-CONTAINED CAR PULLER

Equipped with Jaw Clutch.

Simple, powerful, built up strong and heavy to give greatest service under most severe strain. Positive in action and nothing to give trouble.

Fitted with jaw clutch and made with full cast-iron frame. This outfit is shipped complete, ready to set in place. Capacities are based on straight and level track in good condition.

78F1500 Sizes and Net Prices

Size	Pulley Inch.	Space R.P.M	Size Rope	Capacity Cars	Net Price
41	20x 7	225	1 1/4	3	\$120.00
42	24x11	225	1 1/2	8	195.00
43	30x13	200	1 3/4	12	285.00
44	36x15	200	2	18	400.00

Friction Clutch and Wire Rope for Pullers Furnished See Index.

We can furnish in connection with our car pullers a drum, driven by a belt from a pulley on the spool shaft, which takes up the slack rope and is under perfect control by means of a hand lever actuating a tightener pulley against the belt.

This device is separate from the car puller itself.

The drum may be carried on floor stands or suspended overhead as desired. Write for prices stating quantity of rope you will use in connection with car puller.

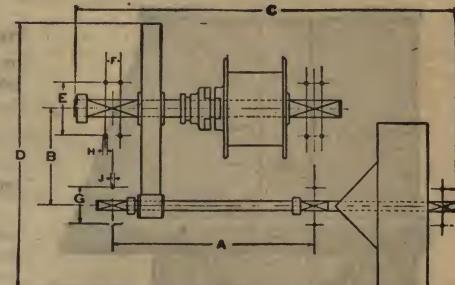
Lead Sheaves

78F1501	Net	78F1502	Net
Single 12" Sheave..	\$28.00	6"x10" Forged Steel	\$15.00
Single 18" Sheave..	55.00	6"x12" Forged Steel	20.00
Double 12" Sheave..	55.00	6"x14" Forged Steel	25.00
Double 18" Sheave..	108.00		

Price on Puller includes Pulley, but not Lead Sheaves or Rope.

CAR PULLERS AND CAR MOVERS

SINGLE DRUM WIRE ROPE CAR PULLERS



These Car Pullers are made to meet the requirements of every situation and for the most exacting service. While the design may be changed to meet any local condition when desired, the standard forms shown above will fit almost every condition.

The capacities are based on normal conditions, with straight and level track, and in weather which does not hamper car movement. Under such normal conditions the starting resistance is about two horse power per loaded car. On bad track, against adverse grades, and in cold and snowy weather and abnormal conditions the effective capacity of the machine will be reduced.

Standard machines are regularly supplied with pulleys for belt drive. When desired, gears may be furnished in place of pulleys for motor connection at the difference in the price between the gears and regular pulley equipment. Cut gears should be used and the motor pinions should be of steel or brass.

Jaw clutched can be furnished spiral instead of square at no extra charge if so ordered. Drums may be supplied with spiral grooves if desired but this is not, as a rule, necessary.

We recommend the use of Plow Steel Wire Rope on all pulleys. See Page 126 for prices.

See Page 78 for Sheaves and Accessories.

Prices quoted below are for the machines K. D. No structural steel frame work is supplied at the prices quoted.

78F1517.

SPECIFICATIONS AND NET PRICES

Size No.	Weight, Each, Pounds	Horse- power	Capac- ity, Cars	Drum Size, Inches			Main Gear		Dia. Drum Shaft	Dia. Count. Shaft	Drive Pulley		Clutch Number	Dia. of Cable	Cut Gears for Motor Teeth	D.P.	Net Price
				Dia.	Face	Flange	No. of Teeth	Pitch Inches			Size	R.P.M.					
111	850	10	3	15	11	21	* 90	1 1/4	2 5/16	2 3/16	28x 9	112	2412	1 1/2	98	3 1/2	\$300.00
112	2200	27	8	18	14	26	* 104	1 1/2	4 1/8	2 11/16	42x12	128	2424	5/8	86	2	545.00
113	3550	40	12	22	16	31	* 124	1 1/4	5 7/8	3 3/16	48x16	117	2624	3/4	94	1 1/4	795.00
115	5130	61	18	26	20	36	* 110	2	6 1/2	3 15/16	60x18	93	4427	5/8	120	1 1/2	1150.00

*Gears and pinions figured cast steel; motor pinions steel. All pinions figured 13 tooth.

DIMENSIONS

Size No.	Capacity Cars	DIMENSIONS, INCHES							Foot Bolts	
		A	B	C	D	E	F	G	H	I
111	3	40	19 5/16	81	50	9 3/8	.....	7 5/8	7/8	5/8
112	8	50	22	100	60	11 1/2	3 1/4	8 1/4	5/8	5/8
113	12	60	27 3/8	117	77	13 3/4	4 1/8	9 3/8	5/8	5/8
115	18	72	34	136	96	16	5	9 1/2	1	5/8

THE BADGER CAR MOVER

The Never Slip Spur Catches the Outer Edge of the Rail Where It Is Soft. It Gets a Double Grip on the Rail.

Is the latest improved device on the market for handling cars by hand. This mover is provided with never slip spurs, which is the most important feature on a car mover.

It has two square or four cornered spurs which catch the outer edges of the rail where it is soft, and not where the others do on top of the rail where it has become case hardened from wear of the car wheels.

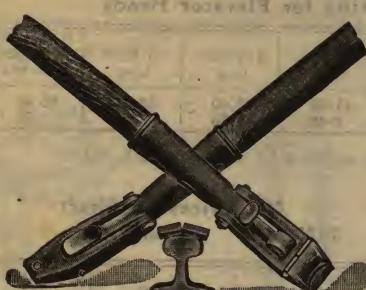
These spurs can be driven out and turned three times and then change ends to be used four times more should the edges get dull.

It is very easy to move a car if your mover does not slip back. By the use of our double spur we get a double hold on the rail and thereby double the resistance which is the most essential part of a mover.

It is also provided with a cam which is pivoted to the end of the main lever in such a way that when the handle is pressed down it lengthens and follows the wheel, and thereby adds an immense rolling power.

It is so constructed that when the handle is raised to push the mover forward it raises the spur from the rail and thus does away with all springs, which are only a nuisance.

The best selected hardwood handle and malleable castings make it light, handy and strong. Weighs 15 pounds.



The New
Never Slip

The Old
Always Slip

78E1520—Price, net. Each..... \$7.50

78E1521—Extra Spurs. " " " 50

Guaranteed for 6 months against defects in workmanship or material

COMPLETE ELEVATORS



Net Prices based on complete elevators, 40 feet from center of head pulleys to center of boot shaft, with price per foot for longer or shorter lengths. Made of Clear Poplar Lumber, surfaced on both sides.

Complete, Ready to Install.

Style "C" Head, and Style "A" Boot, including necessary legging (not assembled.)

Cotton Belting, three or four ply, with Salem Buckets attached (with bolts) ready to run. Buckets spaced 16 inches apart. Prices named below are based on an elevator 40 feet from center of head pulley to center of boot shaft. Legging **not assembled**. When desired assembled, add 20 per cent to prices named. To find the cost of an elevator of shorter or longer length, add or deduct price per foot (named below) from the price of the 40 foot elevator.

Prices do not include shaft in head pulley, head bearings or collars.

SIZES AND NET PRICES—LEGGING NOT ASSEMBLED

When Legging Is Desired Completely Assembled, Add 20 Per Cent to Net Prices.
78N1610

Elevator Number	Size Cups		Width, Belt, Inches	Size Head and Boot Pulley, Inches	Net Prices, with 3-ply Cotton Belt and Salem Cups attached, Style M	Add or deduct per foot for longer or shorter length	Net Prices, with 4-ply Cotton Belt and Salem Cups attached, Style L	Add or deduct per foot for longer or shorter length
	Width	Projection						
53	3 x 3	3½	16x 4	\$69.95	\$1.00	\$72.00	\$1.05	
54	3½ x 3	4	16x 4½	73.80	1.10	76.10	1.15	
55	4 x 3	4½	16x 5	80.30	1.25	82.60	1.30	
56	3 x 3	3½	18x 4	71.61	1.00	73.70	1.05	
57	3½ x 3	4	18x 4½	75.50	1.10	77.80	1.15	
58	4 x 3	4½	18x 5	82.30	1.25	84.60	1.30	
59	4½ x 3½	5	18x 5½	86.25	1.30	88.77	1.35	
60	5 x 4	5½	18x 6	91.47	1.40	94.23	1.45	
61	6 x 4	7	18x 7	100.34	1.50	104.24	1.60	
62	4 x 3	4½	20x 5	84.66	1.25	87.00	1.30	
63	4½ x 3½	5	20x 5½	88.88	1.30	91.43	1.35	
64	5 x 4	5½	20x 6	95.17	1.40	97.96	1.45	
65	5½ x 4	6	20x 6½	98.00	1.50	101.10	1.55	
66	6 x 4	7	20x 7½	103.36	1.50	107.31	1.60	
67	7 x 4½	8	20x 8½	114.57	1.65	118.98	1.75	
68	6 x 4	7	24x 7½	108.15	1.50	112.15	1.60	
69	7 x 4½	8	24x 8½	120.99	1.65	125.43	1.75	
70	8 x 5	9	24x 9½	135.74	2.00	140.68	2.10	
71	9 x 5	10	24x 10½	146.85	2.35	152.72	2.50	

OTHER SIZES FURNISHED—PRICES ON APPLICATION.

For Capacities of Elevators—See page 82 on Elevator Heads.
For Trunking Dimensions—See page 84 on Elevator Legging.

78N1612 Net Prices on Shafting for Elevator Heads

Shaft Ins.	2½ foot long	3 foot long	3½ foot long	4 foot long	4½ foot long	5 foot long	6 ft. and over per foot net
1 ½	\$1.15 1.50	\$1.35 1.80	\$1.50 2.10	\$1.80 2.40	\$2.00 2.70	\$2.25 3.00	\$0.40 .53
1 ¾							

Price per foot on shafts 6 feet long or over is for standard lengths only.

Net Prices on Rigid Head Bearings

Net Prices on Shaft Collars

Bearings	Size Shaft Inches	Length Bearing Inches	Net Price, Pair	Shaft	Length of each on Shaft	Net Price, Pair
Light	1 ½	4 ½	\$1.20	1 ½	1 ¼"	\$0.80
Pillow	1 ½	4 ¾	1.60	1 ½	1 ½"	.94
Blocks						
Heavy	1 ½	5 ½	1.80			
Pillow	1 ½	5 ¾	2.25			
Blocks						
Rigid	1 ½	5 ¼	3.20			
Post						
Boxes	1 ½	6	4.00			

Prices on Complete Elevators do not include Head Shaft Bearings, Collars or Pulley to Drive.

When these are desired see prices and sizes above, and state size of Elevator, size and length of Head Shaft, kind of Bearings, and all information.

Prices quoted do not include Head Shaft, Head Shaft Bearings, Collars, Sprocket or Pulley to Drive.

For adjustable bearings see page of this catalog.

GUMP'S BALL BEARING ELEVATORS



Made of clear poplar lumber, finished throughout in natural color. Put together with screws. Iron work painted black; woodwork in natural color, highly varnished.

The head and boot shafts run on ball bearings, which fit in an adjustable frame. The up leg is fitted with door to allow operator access to belt and cups. The boot is fitted with slide bottom so that it can be thoroughly cleaned out.

In ordering, state if elevator is to be used for flour or grain.

Shipped
Assembled
Ready
to
Use.

78N1618

Sizes and Net Prices

No.	Size Cups, Inches	Width Belt, Inches	Size of Drive Pulley, Inches	*A 6 Foot	*B 8 Foot	*C 10 Foot	Price Hopper Extra
72	2½x2½	3	12x3	\$58.46	\$62.10	63.80	\$12.00
73	3x3	3½	12x3	60.26	62.94	65.56	12.00
74	3½x3	4	12x3	62.02	64.64	67.33	12.00
75	4x3	4½	12x3	63.80	67.33	70.88	12.00
76	4½x3	5	12x3	67.33	70.88	75.14	12.00
77	5x4	5½	12x3	70.88	74.43	79.38	12.00

Capacities and Weight. *Sizes given are center to center of shaft dimensions.

No.	Grain, Bushels Per Hour	Flour, Pounds Per Hour	Shipping Weight, 10 Foot	Capacities based on cups two-thirds full. Shipping weight given is without Hopper.
72	40	1,000	190 lbs.	Speed on grain—110 to 120 R. P. M.
73	60	2,000	200 lbs.	Speed on flour—112 to 115 R. P. M.
74	65	2,500	210 lbs.	
75	80	3,000	225 lbs.	For Grain, hopper is to be attached like cut.
76	85	3,500	250 lbs.	For Flour or Meal, hopper is to be attached on opposite side—viz.: The down leg.
77	160	6,500	360 lbs.	

BARREL AND SACK ELEVATORS

For elevating or lowering filled bags or barrels, either vertically or inclined. A standard elevator measures 14 feet between top and bottom shafts, consisting of one speed shaft with collars, rosette bearings and a pair of 14x6 tight and loose pulleys; one top shaft with collars, two special angle base bearings, two No. 78 sprocket wheels and a pair of cast spur gears to connect top shaft to speed shaft; one bottom shaft with collars, a pair of style A take-up bearings and two No. 78 sprocket wheels; one ratchet wheel with adjustable dog; two strands of No. 78 link belting to connect top and bottom shafts, and two pairs of 18 inch malleable curved carrying arms with cushion spring braces and lateral spacing pipes and rods, attachment links to suit. **78N1619** Total net price \$170.00

Add or subtract \$1.40 per foot difference in height of elevator from standard. For each additional pair of carrying arms, add \$11.25. The wood frame to be supplied by purchaser, according to blue print, installation drawings accompanying each order. Pulleys revolving at 120 r.p.m. give a chain travel of 100 feet per minute. For heights exceeding 35 ft. apply for price on a heavier type of elevator.



Double
Strand Chain
Elevator



Continuous Bucket
Elevator with
Pressed Steel
Buckets



Single
Strand Chain
Elevator

We can furnish Chain Elevators in any size or style and for any purpose. If you have an Elevator Problem, write us and we will quote you on the outfit best suited to your needs.

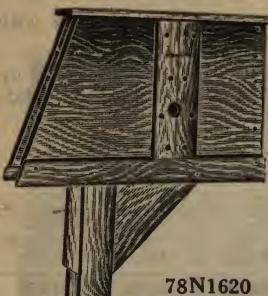
Steel Tanks for Elevator Boots



We are prepared to furnish water-tight steel Boot Tanks for any size, shape or gauge of metal. Prices on application.

Wood Elevator Heads

Made of Dressed, Seasoned,
Clear Poplar Lumber



78N1620

Design approved by the insurance underwriters. Made in three sections, the top half in two parts, which can be readily separated from the bottom section and the pulley changed without disturbing the legs and lower section.

In ordering elevator heads with pulleys, be sure to specify the size of shaft to be used and whether solid or split pulleys are wanted.

We carry a complete stock of Solid Cast Iron Pulleys for elevator heads up to 24 inch diameter inclusive with $1\frac{1}{16}$ inch bore.

Prices quoted are for solid pulleys. Write for prices on split pulleys.

Prices stated do not include head shaft bearings or collars.

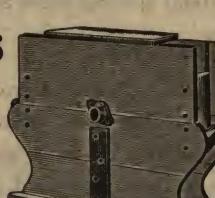
SIZES, NET PRICES AND TABLE OF SPEEDS AND CAPACITIES.

No.	Size of Cups	Width of Belt	Size of Head Pulley	Rev. per Minute	Belt Speed in Feet per Minute	GRAIN Capacity per Hour Cups 16 ins. apart Cups $\frac{3}{8}$ full	FLOUR or MEAL Capacity per Hour Cups 16 ins. apart Cups $\frac{3}{8}$ full	Size of Dressed Cypress Lumber Used	Net Price Head Without Pulley	Net Price Head Pulley
	Width Projection									
1	3 x3	3 $\frac{1}{2}$	16x 4	48	200	38 bu.	1312 lbs.	1 "	\$8.65	\$3.90
2	3 $\frac{1}{2}$ x3	4	16x 4 $\frac{1}{2}$	48	200	43 bu.	1688 lbs.	1 "	9.00	4.10
3	4 x3	4 $\frac{1}{2}$	16x 5	48	200	50 bu.	2062 lbs.	1 "	9.35	4.35
4	3 x3	3 $\frac{1}{2}$	18x 4	45	212	40 bu.	1390 lbs.	1 "	9.00	4.38
5	3 $\frac{1}{2}$ x3	4	18x 4 $\frac{1}{2}$	45	212	46 bu.	1790 lbs.	1 "	9.35	4.60
6	4 x3	4 $\frac{1}{2}$	18x 5	45	212	53 bu.	2186 lbs.	1 "	9.75	4.95
7	4 $\frac{1}{2}$ x3 $\frac{1}{2}$	5	18x 5 $\frac{1}{2}$	45	212	79 bu.	3180 lbs.	1 "	10.10	5.20
8	5 x4	5 $\frac{1}{2}$	18x 6	45	212	112 bu.	4373 lbs.	1 "	10.35	5.55
9	6 x4	6 $\frac{1}{2}$	18x 7	45	212	135 bu.	4770 lbs.	1 "	11.25	6.22
10	4 x3 $\frac{1}{2}$	4 $\frac{1}{2}$	20x 5	42	220	55 bu.	2270 lbs.	1 "	10.10	5.67
11	4 $\frac{1}{2}$ x3 $\frac{1}{2}$	5	20x 5 $\frac{1}{2}$	42	220	82 bu.	3317 lbs.	1 "	10.50	6.00
12	5 x4	5 $\frac{1}{2}$	20x 6	42	220	115 bu.	4518 lbs.	1 "	11.25	6.37
13	5 $\frac{1}{2}$ x4	6	20x 6 $\frac{1}{2}$	42	220	127 bu.	4744 lbs.	1 "	11.50	6.50
14	6 x4	7	20x 7 $\frac{1}{2}$	42	220	140 bu.	4950 lbs.	1 "	11.75	7.08
15	7 x4 $\frac{1}{2}$	8	20x 8 $\frac{1}{2}$	42	220	212 bu.	7837 lbs.	1 "	12.00	7.83
16	6 x4	7	24x 7 $\frac{1}{2}$	40	251	160 bu.	5644 lbs.	1 "	12.35	8.73
17	7 x4 $\frac{1}{2}$	8	24x 8 $\frac{1}{2}$	40	251	240 bu.	8943 lbs.	1 "	12.75	9.60
18	8 x5	9	24x 9 $\frac{1}{2}$	40	251	330 bu.	12,236 lbs.	1 "	13.00	10.50
19	9 x5	10	24x10 $\frac{1}{2}$	40	251	360 bu.	13,177 lbs.	1 "	13.50	11.40
20	9 x5	10	30x10 $\frac{1}{2}$	38	298	437 bu.	.....	1 $\frac{1}{2}$ "	23.50	16.28
21	11 x6	12	30x13	38	298	800 bu.	.....	1 $\frac{1}{2}$ "	24.00	23.88
22	12 x6	13	30x14	38	298	857 bu.	.....	1 $\frac{1}{2}$ "	30.00	25.52
23	11 x6	12	36x13	37	349	935 bu.	.....	1 $\frac{1}{2}$ "	36.00	30.52
24	12 x6	13	36x14	37	349	1000 bu.	.....	1 $\frac{1}{2}$ "	39.00	32.56
25	14 x6	15	36x16	37	349	1185 bu.	.....	1 $\frac{1}{2}$ "	41.00	36.68
26	12 x6	13	42x14	36	396	1135 bu.	.....	1 $\frac{1}{2}$ "	42.00	39.60
27	14 x6	15	42x16	36	396	1344 bu.	.....	1 $\frac{1}{2}$ "	45.00	44.32
28	16 x6	18	42x19	36	396	1580 bu.	.....	1 $\frac{1}{2}$ "	48.00	51.48
29	11 x6	12	48x13	34	427	1150 bu.	.....	1 $\frac{1}{2}$ "	60.00	45.24
30	12 x6	13	48x14	34	427	1230 bu.	.....	1 $\frac{1}{2}$ "	61.50	48.00
31	14 x6	15	48x16	34	427	1460 bu.	.....	1 $\frac{1}{2}$ "	65.00	53.60
32	16 x6	18	48x19	34	427	1700 bu.	.....	1 $\frac{1}{2}$ "	67.50	62.16

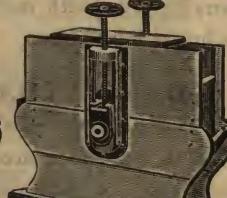
Wood Elevator Boots

The most approved designs, made of one inch dressed clear Poplar Lumber and put together with flat head Bright Wood Screws.

All Boots equipped with clean-out slides. All boot pulleys are of Cast Iron, machine molded, bored, balanced and turned in a lathe.



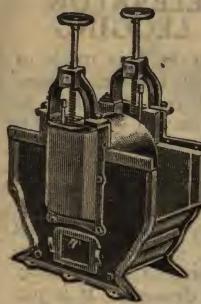
Style A

Style C
Adjustable BoxesStyle D
Adjustable Boxes

SIZES AND NET PRICES (With Table of Speeds and Capacities)

Size	Size of Cups	Width of Belt	Size of Boot Pulley	Rev. per Minute	Belt Speed in Ft. per Minute	GRAIN Capacity Per Hour Cups 16 ins apart Cups $\frac{3}{8}$ full	Net Price Style "A" Boot and Boot Shaft Without Pulley 78N1622	Net Price Style "C" Boot and Bt. Shaft Without Pulley 78N1624	Net Price Style "D" Boot and Boot Shaft Without Pulley 78N1626	Net Price of Pulley Extra
	Width Projection									
33	3 x3	3 $\frac{1}{2}$	16x 4	48	200	38 bu.	\$8.65	\$10.65	\$22.65	\$3.90
34	3 $\frac{1}{2}$ x3	4	16x 4 $\frac{1}{2}$	48	200	43 bu.	9.00	11.25	24.00	4.10
35	4 x3	4 $\frac{1}{2}$	16x 5	48	200	50 bu.	9.35	11.60	24.35	4.35
36	3 x3	3 $\frac{1}{2}$	18x 4	45	212	40 bu.	9.00	12.25	24.00	4.38
37	3 $\frac{1}{2}$ x3	4	18x 4 $\frac{1}{2}$	45	212	46 bu.	9.35	12.50	24.35	4.60
38	4 x3	4 $\frac{1}{2}$	18x 5	45	212	53 bu.	9.75	12.75	24.75	4.95
39	4 $\frac{1}{2}$ x3 $\frac{1}{2}$	5	18x 5 $\frac{1}{2}$	45	212	79 bu.	10.10	13.10	25.10	5.20
40	5 x4	5 $\frac{1}{2}$	18x 6 $\frac{1}{2}$	45	212	112 bu.	10.35	13.35	25.35	5.55
41	6 x4	6 $\frac{1}{2}$	18x 7	45	212	135 bu.	11.25	14.25	26.25	6.22
42	4 x3	4 $\frac{1}{2}$	20x 5	42	220	55 bu.	10.10	13.20	25.10	5.67
43	4 $\frac{1}{2}$ x3 $\frac{1}{2}$	5	20x 5 $\frac{1}{2}$	42	220	82 bu.	10.50	13.60	25.50	6.00
44	5 x4	5 $\frac{1}{2}$	20x 6	42	220	115 bu.	11.25	14.45	26.25	6.37
45	5 $\frac{1}{2}$ x4	6	20x 6 $\frac{1}{2}$	42	220	127 bu.	11.50	14.80	26.50	6.50
46	6 x4	7	20x 7 $\frac{1}{2}$	42	220	140 bu.	11.75	15.00	26.75	7.08
47	7 x4 $\frac{1}{2}$	8	20x 8 $\frac{1}{2}$	42	220	212 bu.	12.00	15.25	27.00	7.83
48	6 x4	7	24x 7 $\frac{1}{2}$	40	251	160 bu.	12.35	15.60	29.35	8.73
49	7 x4 $\frac{1}{2}$	8	24x 8 $\frac{1}{2}$	40	251	240 bu.	12.75	16.00	29.75	9.60
50	8 x5	9	24x 9 $\frac{1}{2}$	40	251	330 bu.	13.00	16.25	30.00	10.50
51	9 x5	10	24x10 $\frac{1}{2}$	40	251	360 bu.	13.50	16.75	30.50	11.40

ELEVATOR BOOTS AND ELEVATOR BELTING



STANDARD CAST IRON ELEVATOR BOOT

Our cast iron Elevator Boots are specially intended for handling wheat, corn, oats, etc.

They are neat in design, are strong and substantially built, and cannot be beat for the money.

Provided with hand holes for clean out, oil tubes, and take-ups.

Fitted with either sprocket wheels or pulleys.

SUPERIOR WROUGHT IRON ELEVATOR BOOT



SUPERIOR WROUGHT IRON ELEVATOR BOOT

Superior Wrought Iron Boots are the strongest and the most durable boots on the market. Made of heavy sheet iron sides and cast iron frames, with extra supports to hold the weight of the elevators. Side tighteners, shields to protect bearings from dust and long oil tubes are of some of the special features.

Clean out doors on side or end, as desired. Furnished with either sprockets or pulleys, as desired. Give length and projection of buckets in ordering.

78N1654

Sizes and Net Prices

No.	Pulley Inches	Size Bucket	Price, Each	No.	Pulley Inches	Size Bucket	Price, Each
1	10 x 5	4½ x 3½	\$21.00	15	18 x 13	11 x 6	\$60.00
2	10 x 6	5 x 4	23.00	16	18 x 14	12 x 6	66.00
3	12 x 6	5 x 4	28.00	17	20 x 11	10 x 5½	70.00
4	12 x 7	6 x 4	30.00	18	20 x 13	11 x 6	73.00
5	12 x 8	7 x 4½	32.00	19	20 x 14	12 x 6	77.00
6	14 x 7	6 x 4	33.00	20	20 x 17	14 x 6	80.00
7	14 x 8	7 x 4½	35.00	21	20 x 19	16 x 6	85.00
8	14 x 9	8 x 5	40.00	22	20 x 21	18 x 6	90.00
9	16 x 9	8 x 5	43.00	23	24 x 13	11 x 7	92.50
10	16 x 10	9 x 5	45.00	24	24 x 15	13 x 7	94.50
11	16 x 11	10 x 5½	50.00	25	24 x 17	15 x 7	97.50
12	16 x 13	11 x 6	52.00	26	24 x 19	16 x 7	100.00
13	18 x 9	8 x 5	56.00	27	24 x 21	18 x 7	105.00
14	18 x 11	10 x 5½	58.00				

78N1656

Sizes and Net Prices

Number	Width Bucket Inches	Width Belt Inches	Pulley Inches	Price, Each
110	4½	5	10 x 6	\$36.00
111	5	5½	10 x 6	36.80
112	6	7	12 x 8	37.80
113	7	8	14 x 9	39.50
114	8	9	14 x 10	45.00
115	9	10	16 x 11	51.30
116	10	11	16 x 12	56.25
117	11	12	16 x 13	58.00
118	12	13	18 x 14	64.00
119	14	15	18 x 16	68.50

Elevator Belts with Salem Buckets Attached



Solid Woven White Cotton Belt With Cups Attached

78N1650

16 Inches Apart—NET PRICES

Length, Feet	Width, Belt, In.	Ply	No. of Salem Buckets	Size, Salem Buckets	Net Price	Length, Feet	Width Bolt Inches	No. of Salem Buckets	Size, Salem Buckets	Net Price,	
100	3½	3	75	3 x 3	\$17.00	100	6	4	75	5½ x 4	\$32.00
100	4	3	75	3½ x 3	18.00	100	7	4	75	6 x 4	34.00
100	4½	3	75	4 x 3	22.00	100	8	4	75	7 x 4½	43.50
100	5	3	75	4½ x 3½	23.00	100	9	4	75	8 x 5	52.00
100	5½	3	75	5 x 4	25.50	100	10	4	75	9 x 5	57.50
100	6	3	75	5½ x 4	28.00	100	11	4	75	10 x 5½	64.00
100	7	3	75	6 x 4	30.00	100	12	4	75	11 x 6	76.00
100	8	3	75	7 x 4½	38.50	100	12	5	75	11 x 6	87.00
100	5	4	75	4½ x 3½	29.00	100	13	4	75	12 x 6	84.00
100	5½	4	75	5 x 4	39.00	100	13	5	75	12 x 6	97.00

Extra Standard Rubber Belt With Salem Cups Attached

78N1652

16 Inches Apart—NET PRICES

Length, Feet	Width, Belt, In.	Ply	No. of Salem Buckets	Size, Salem Buckets	Net Price, Steel, Gram	Length, Feet	Width, Bolt, In.	Ply	No. of Salem Buckets	Size, Salem Buckets	Net Price, Steel, Gram
100	5	4	75	4½ x 3½	\$49.00	100	14	5	75	12 x 6	\$169.00
100	6	4	75	5½ x 4	60.00	100	14	5	75	12 x 7	181.00
100	7	4	75	6 x 4	67.50	100	14	5	75	14 x 7	184.00
100	8	4	75	7 x 4½	78.00	100	15	4	75	14 x 6	158.00
100	9	4	75	8 x 5	69.50	100	15	4	75	14 x 7	167.00
100	10	4	75	9 x 5	98.00	100	15	5	75	14 x 6	184.00
100	10	5	75	9 x 5	115.00	100	15	5	75	14 x 7	193.00
100	11	4	75	10 x 5½	109.00	100	16	5	75	15 x 7	212.00
100	11	5	75	10 x 5½	128.00	100	17	5	75	16 x 7	209.00
100	12	4	75	11 x 6	125.00	100	17	5	75	16 x 7	235.00
100	12	5	75	11 x 6	146.00	100	18	5	75	16 x 7	243.00
100	13	4	75	12 x 6	138.00	100	20	5	75	18 x 7	265.00
100	13	5	75	12 x 6	161.00	100	22	4	75	20 x 6	227.00
100	14	4	75	12 x 6	145.00	100	22	5	75	20 x 6	265.00

*Fitted with Steel Corn Bucket.

†Fitted with Steel Ear Corn Buckets.

Note.—Can attach buckets 12 inches apart at a small additional charge.

Complete elevator belts made from solid woven white cotton belting, red stitched canvas belting, or rubber belting, can be promptly supplied.

We carry in stock and can equip elevator belts with Salem, Superior "D. P.", Minneapolis "V", Tin Mill, Steel Corn, Steel Grain, Malleable Iron or any style of elevator buckets.

Prices given on this page are for belts 100 feet in length with buckets spaced every 16 inches. Shorter or longer lengths at proportionate prices.

ELEVATOR LEGGING AND SUPPLIES



Style B

ELEVATOR LEGGING

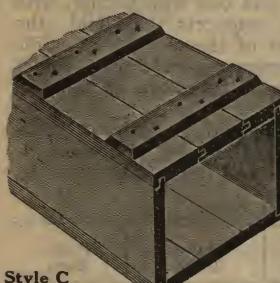
For 30x10½' Head
Pulley and Larger
STYLE "B"

Side Boards machine dressed,
finished on both sides and sized
to 1½" lumber.

All Front Boards of 1"
dressed lumber.

STYLE "C"

Side and Front Boards on
30x10½ to 30x14 made of 1¼"
dressed lumber; all other sizes
of 1½" dressed lumber. Front
Boards grooved and splines
furnished.

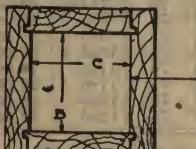


Style C

78N1644 Net Price—Per Foot—Styles "B" and "C"

Size of Iron Cup, Inch.	Width of Belt, Inch.	Size of Head Pulley, Inch.	Size of Legging		Style "B"	Style "C"
			Front Board Inch.	Side Board Inch.	Price per ft. both Legs	Price per ft. Yellow Pine
9x5	10	30x10½	14½	9	\$1.50	\$1.80
11x6	12	30x13	17	10	1.80	2.15
12x6	13	30x14	18	10	1.90	2.25
11x6	12	36x13	17	10	1.80	2.15
12x6	13	36x14	18	10	1.90	2.25
14x6	15	36x16	20	10	2.05	2.40
12x6	13	42x14	18	10	1.90	2.25
14x6	15	42x16	20	10	2.05	2.40
16x6	18	42x19	24	10	2.20	2.70
11x6	12	48x13	17	10	1.80	2.15
12x6	13	48x14	18	10	1.90	2.25
14x6	15	48x16	20	10	2.05	2.40
16x6	18	48x19	24	10	2.20	2.70

TRUNKING DIMENSIONS



Size of head pulley, inches..... 16 15½ 18 17½ 20 19½ 24 23½
Dimensions "A" in inches.....

Size Cups	"B"	"C"	Size Cups	"B"	"C"
3 x3	4½"	4½"	5½x2	6½"	5½"
3½x3	4½"	4½"	6 x4	7½"	5½"
4 x3	5½"	4½"	7 x4½	8½"	6½"
4½x3½	5½"	4½"	8 x5	9½"	6¾"
5 x4	6¾"	5½"	9 x5	10½"	6¾"

RUBBER HEAD MALLETS



These mallets are almost indispensable to the miller for tapping spouts, bins, feeders, reels, sifters, etc., in which any stock may have become clogged. Made of best quality rubber, resilient, and will give long service. Made in two sizes.

78E1628 Size Head 3x2½ inches, each \$1.25

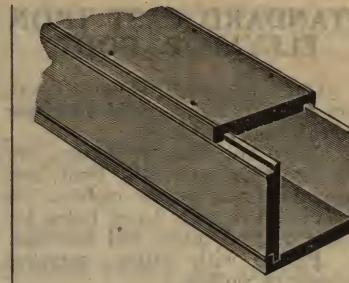
78E1630 Size Head 4x2½ inches, each \$1.50

HEAD BEARINGS



Allow the removal of one side of head without removing bolts or screws. Babbitted. Furnished with heads or separately as desired.

78N1631
1-11/16" Pair \$3.00
1-15/16" Pair \$4.00



Style A

ELEVATOR LEGGING

Style A is made of 1-inch Poplar, dressed and put together as shown in cut. This style is used on all sizes up to 14½x9 inches. Style B has the side boards made of 1½-inch lumber, dressed on sides and face boards of 1-inch flooring dressed. It is put together with the face

boards set in a groove in the side boards and a quarter round strip added to give it a finish. Style C has side boards of 1½-inch lumber dressed on both sides, and face boards of 1½-inch lumber, dressed and grooved with spline. Styles B and C are used in all sizes over 14x9 ins.

78N1640

Sizes—Net Prices, Etc.

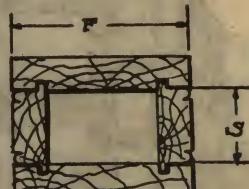
Size of Cups	Width and Projection Inches	Width of Belt, Inches	Size of Head and Boot Pulleys	Size of Legging	Style "A"
3 x3	3½	16x4	6½	4½	\$0.80
3½x3	4	16x4½	6½	4½	.85
4 x3	4½	16x5	7½	4½	.90
3 x3	3½	18x4	6½	4½	.80
3½x3½	4	18x4½	6½	4½	.85
4 x3	4½	18x5	7½	4½	.90
4½x3½	5	18x5½	7½	4½	.95
5 x4	5½	18x6	8½	5½	1.00
6 x4	6½	18x7	9½	5½	1.05
4 x3	4½	20x5½	7½	4½	.90
4½x3½	5	20x6	8½	5½	.95
5 x4	5½	20x6½	8½	5½	1.00
5½x4	6	20x7	9½	5½	1.05
6 x4	7	20x8½	10½	6½	1.10
7 x4½	8	24x7½	9½	5½	1.05
6 x4	7	24x8½	10½	6½	1.10
7 x4½	8	24x9½	11½	6½	1.25
*8 x5	9	24x10½	12½	6½	1.40
*9 x5	10	24x10½	12½	6½	1.40

* These sizes made of 7/8 in. lumber style C only.

SPOUTING

Tongued, Grooved and Beaded

Spoutting made of Poplar, 1 inch, dressed on both sides. Tongued and grooved, ready to put together. When desired assembled, add 20% to price.



78N1642 DIMENSIONS AND NET PRICES

Size, outside measure, in...	5½x4½	6x4½	6x5½	7x5½
Face Board, inches, "F"...	5½	6	6	7
Filler, inches, "S"...	2½	3	3½	3½
Poplar, pr. ft. length...	\$0.30	\$0.33	\$0.35	\$0.33
Size, outside measure, inches.....	7x5½	8x6½	10x6½	10x6½
Face Board, inches, "F"...	7	8	10	10
Filler, inches, "S"...	4	4½	5	5
Poplar, pr. ft. length...	\$0.40	\$0.45	\$0.50	\$0.50

BOOT BEARINGS



Ends closed to allow use of straight shafts without shoulders. Slotted holes allow small adjustment. Babbitted.

78N1643
1-11/16" per Pair \$2.00
1-15/16" per Pair \$2.50

ANGLE IRONS

78N1646

For spouting, conveyors, boxes, machinery, elevator legs, etc.

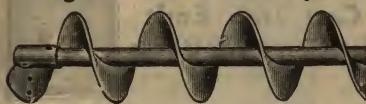
Ea.	25 Lots	50 Lots
No. 1	\$0.12	\$2.75
No. 2	.20	4.50
No. 3	.12	2.75



ALL PRICES SUBJECT TO CHANGE
WITHOUT NOTICE.

STANDARD SPIRAL STEEL CONVEYOR

Regular Steel Conveyor



We can furnish Galvanized Conveyor in all sizes. Prices on application.

In ordering please note the following:

The Standard, lengths given below include the width of one hanger bearing.

The Net Prices given for Standard lengths include one hanger, one coupling, the necessary bolts and lining for each standard length.

Drive Ends and Tail Ends are charged for extra.

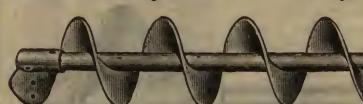
Proper deductions are made for fittings not wanted, which are included with every Standard length.

Fittings are not furnished with conveyors ordered less than Standard length, but will be charged for extra when desired to accompany conveyor.

78N1564 SIZES AND NET PRICES

Outside Diam., In.	Standard Length, Ft.	Diameter of Gudgeons, Inches	Maximum Capacity per Hour, Bu.	Recommended R.P.M.	Net Price, Per Foot	Net Price, per Standard Length
4	8	1	100	220	\$1.50	\$11.20
5	10	1 1/2	200	210	1.70	16.00
6	10	1 1/2	300	200	1.70	16.00
8	10	1 1/2	750	180	2.10	20.00
9	10	1 1/2	1000	175	2.10	20.00
9	10	2	1000	175	2.35	22.00
10	10	1 1/2	1400	160	2.55	24.00
12	12	2	2000	150	2.80	31.50
12	12	2 1/2	2000	150	3.60	40.50
14	12	2	3400	140	3.60	40.50
16	12	3	5000	130	5.00	56.25
13	12	3	6000	120	6.00	67.50

Extra Heavy Steel Conveyor



The price list below includes hangers and couplings (one for each standard length) but NO LINING.

When pieces of conveyor shorter than standard lengths are ordered, no hangers or couplings will be furnished unless so specified in the order, and then an extra charge will be made for fittings. We can supply conveyor on extra heavy pipe if desired. Prices on application.

78N1599 SIZES AND NET PRICES

Diameter Inches	Standard Length Ft.	Thickness of Flight, Inches	Inside Diameter of Pipe, Inches	Net Price, Per Foot
4	8	1/8	1	\$1.78
6	10	1 1/2	1 1/2	1.95
6	10	1 1/2	1 1/2	2.25
9	10	1 1/2	1 1/2	2.40
9	10	1 1/2	1 1/2	3.00
9	10	1 1/2	1 1/2	3.55
9	10	1 1/2	2	3.57
12	12	1 1/2	2	3.60
12	12	1 1/2	2	4.20
12	12	1 1/2	3	4.20
12	12	1 1/2	3	5.10
14	12	1 1/2	2	4.20
16	12	1 1/2	2	5.40
16	12	1 1/2	2	5.70
16	12	1 1/2	3	5.50
18	12	1 1/2	3	6.00
18	12	1 1/2	3	7.50
18	12	1 1/2	3	8.40

Cut Flight Conveyor



For Net Price Add 25% to Price of regular conveyor.

Used in Mills for mixing granular products—also used for removing dirt, sand, grit, etc. from seeds, cotton seed, grains, etc.—in this connection perforated lining is generally used to remove foreign material.

Cut and Folded Flight Conveyor



For Net Price Add 35% to price of the regular conveyor.

Used to stir light material and mix it up thoroughly.

The folded flight makes a retarding action, working the stock continually.

Conveyor with Mixing Paddles



For Net Price Add 35% to price of regular Conveyor.

Used for mixing all kinds of mill stock.



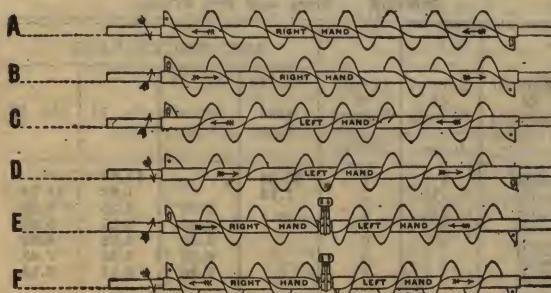
CONVEYOR LINING

Curved steel conveyor lining for conveyor boxes. It is made in standard widths as listed below. The prices shown in heavy black face type are standard gauges. Other prices are for gauges heavier than is used as regular for the various sizes conveyor.

78N1567 SIZES AND NET PRICES—Per Lineal Foot.

Size Conveyor	Width Sheet	Length Sheet	GAUGE OF STEEL							
			24	22	20	18	16	14	12	10
4"	8"	30"	\$0.11	\$0.13	\$0.15	\$0.21	\$0.24	...	...	...
6"	11"	30"	.15	.18	.24	.30	.36	\$0.42	...	...
8"	14"	30"	...	.27	.30	.33	.45	.57	\$0.75	...
9"	16"	30"	...	.30	.33	.45	.51	.60	.81	\$1.08
10"	18"	30"	...	...	.36	.48	.54	.69	.93	1.20
12"	20"	30"	...	...	.42	.57	.66	.81	1.11	1.44
14"	23"	30"	...	...	...	.72	.84	1.02	1.38	1.80
16"	26"	30"	...	...	...	.78	.90	1.11	1.47	1.88
18"	30"	30"	...	...	...	.87	.99	1.23	1.68	2.15

Note: Standard sizes in heavy type.



SPECIAL MIXING CONVEYOR

FOR MIXING MOLASSES, ALFALFA OR ANY FEED REQUIRING HEAVY CONVEYOR.

Specially constructed with cast iron sectional flights which convey and mix the different products at the same time. Furnished complete with heavy wood box and drive end, set up ready for operation. Minimum length furnished is 10 feet. Made in two sizes.

78N1565
9-in. diam. Cap. 1 to 4 tons at 150 R.P.M. Net per ft. \$11.50
12-in. diam. Cap. 3 to 6 tons at 150 R.P.M. Net per ft. 15.00

All lengths furnished, 10 feet long and over at above prices. Price includes box and conveyor.

We can furnish complete plans for all sizes of molasses feed plants and also furnish complete equipment at extremely low prices. Write for complete information stating capacity required and number and kind of products to be mixed.

Unless otherwise ordered, left hand will be furnished.

How To Order Conveyor

The arrows in the cuts indicate which way the conveyor turns and which way the material is carried.

State whether right-hand conveyor or left-hand conveyor is wanted.

State whether linings and hangers are wanted, and state style of hanger preferred.

State length and diameter of driving end, and if possible order driving ends of standard diameters.

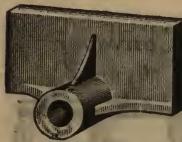
When possible, order conveyors in feet without fractional parts of a foot, and we can fill promptly with stock lengths.

All conveyors made of steel, unless otherwise ordered.

All conveyors shipped right-hand, unless otherwise ordered.

Unless order specifies exact length of pipe, we deduct from length given the width of one hanger bearing.

SCREW CONVEYOR APPLIANCES



**Cast Iron
Ends
For Conveyor
Boxes**

Style B

Where it is desired to deliver the material at the end of the conveyor box without cutting a delivery opening in the bottom of the box, we recommend the use of our special box end for conveyor boxes, as shown in the above cut.

78N1568 Sizes and Net Prices

Diameter Conveyor	Diameter Shaft	Price Each
4-inch	1 -inch	\$1.75
6-inch	1½ -inch	2.75
8-inch	1½ -inch	3.80
9-inch	1½ -inch	4.00
9-inch	2 -inch	4.50
10-inch	1½ -inch	5.00
10-inch	2 -inch	5.50
12-inch	2 -inch	7.00
12-inch	3 -inch	9.00
14-inch	2 -inch	9.00
16-inch	2 -inch	11.50
16-inch	3 -inch	12.50
18-inch	3 -inch	15.00

Standard Conveyor Couplings

78N1574 Sizes and Net Prices

Diameter of Conveyor	Diameter of Coupling	Price Each
4"	1 -inch	\$0.65
6"	1½ -inch	1.15
9"	1½ -inch	1.15
12"	2 -inch	1.95
16" on 2" pipe	2 -inch	1.95
16" on 3" pipe	3 -inch	3.90

Conveyor Flights

For Repairing Standard Conveyor

In ordering flights be particular to state the pitch of screw, inside or outside diameter of pipe, and whether right or left hand.

These prices include necessary rivets and lug fastenings.

The prices given are for standard flights of regular thickness of metal.

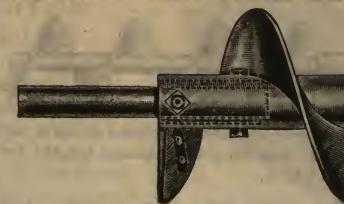
In case any flights are wanted for the end of the section of conveyor, it should be so specified, as such end flights have proper space cut out to go over the end collar on the pipe.

78N1566 Sizes and Net Prices

Diameter of Conveyor	Outside Diameter Pipe, Inches	Standard Pitch of Flight, Inches	Space on Pipe Covered by One Flight, Inches	Net PRICE, Each
4-inch.....	1¼	5	5	\$0.20
6-inch.....	2	6	6½	.27
9-inch.....	2	9½	10	.57
10-inch.....	2	10	12¾	.75
12-inch.....	2½	12	12	1.08
16-inch on 3-inch pipe	3½	16	16	2.20

Heavy Flights Furnished—Prices on Application

Drive Ends for Conveyors



Where driving ends are less diameter than standard, we use shaft of standard diameter and turn the projecting portion. Where driving ends are greater diameter than standard, we use shaft of diameter of projecting portion, and turn about six inches to go into conveyor.

For odd size driving ends we charge for shaft used and labor in cutting off, turning, drilling and fitting same.

78N1569 Sizes and Net Prices

Projection from Pipe Inches	1-inch Diameter	1½-inch Diameter	2-inch Diameter	2½-inch Diameter	3-inch Diameter
6	\$0.55	\$0.94	\$1.48	\$2.28	\$3.38
8	.61	1.05	1.65	2.59	3.85
10	.66	1.16	1.84	2.86	4.26
12	.69	1.27	2.06	3.16	4.70
14	.74	1.40	2.26	3.44	5.14
16	.80	1.51	2.45	3.74	5.58
18	.85	1.65	2.67	4.04	6.05
20	.91	1.76	2.86	4.35	6.49
22	.96	1.87	3.05	4.62	6.93
24	1.02	1.98	3.25	4.92	7.37
26	1.07	2.09	3.47	5.20	7.78
28	1.13	2.20	3.69	5.50	8.25
30	1.21	2.34	3.91	5.86	8.75
32	1.27	2.48	4.10	6.13	9.16
34	1.32	2.59	4.29	6.44	9.60
36	1.38	2.70	4.48	6.71	10.04
42	1.51	3.03	5.06	7.59	11.36
48	1.71	3.38	5.64	8.44	12.65

Drive Ends Keyseated to Specifications When Desired.—For Prices of Keyseating See Page on Shafting.

Cast Iron Ends For Conveyor Boxes



Style A

This cast iron end for conveyor trough takes the place of a hanger or bearing. It makes a much more rigid bearing for driving ends than a hanger or outside pillow block and costs less, when the labor and material for the foundation for outside bearing is considered. The bearing is babbitted.

78N1570 Sizes and Net Prices

Diameter Conveyor	Diameter Shaft	Net Price Price
4-inch	1 -inch	\$1.60
6-inch	1½ -inch	2.40
8-inch	1½ -inch	3.50
9-inch	1½ -inch	3.60
9-inch	2 -inch	4.00
10-inch	1½ -inch	4.40
10-inch	2 -inch	4.80
12-inch	2 -inch	6.40
12-inch	3 -inch	8.00
14-inch	2 -inch	10.50
14-inch	3 -inch	11.50
16-inch	2 -inch	13.00
16-inch	3 -inch	14.00
18-inch	3 -inch	17.00

Flight Supports

Center Lugs End Lugs (threaded)

78N1573

Size Conveyor	Diam. Shank	Price Each	Size Conveyor	Diam. Shank	Price Each
4"	¾	\$0.08	4"	¾	\$0.15
6"	1½	.10	6"	1½	.20
9"	1½	.12	9"	1½	.25
12"	1½	.14	12"	1½	.35



Conveyor hangers, in any size in the three styles as shown can be supplied on short notice. We are also prepared to supply special hangers when desired.

Prices on special hangers quoted on application.

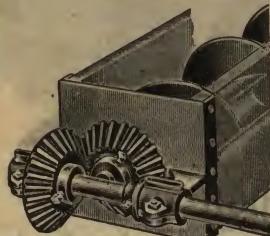
The styles shown are those which are regularly used on the different sizes of conveyors. The style No. 13 hanger is the one most commonly used. 4 and 6-inch sizes in this style are shipped regularly with solid cap, unless otherwise specified.

78N1575 Sizes and Net Prices

Diameter of Conveyor	Bore of Bearing	Length of Bearing	NET PRICES, EACH			
			No. 13	No. 13	No. 14	No. 17
	Inches	Inches	Solid Eye	Bolted Cap		
4-inch....	1	1½	\$0.98	.....	\$1.62	.....
6-inch....	1½	2	1.14	.....	1.62	\$1.79
9-inch....	1½	2	.....	1.95	2.28	2.28
12-inch....	2	2	.....	2.93	3.25	3.25
16-inch....	2	2	.....	4.55	4.88	4.88
16-inch....	3	3	.....	6.83	7.48	7.48
18-inch....	3	3	.....	7.48	8.13	8.13



Counter Shaft Conveyor Box Ends

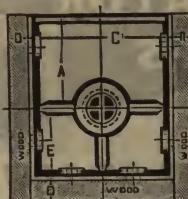


For use in driving conveyors that run at right angles to the driving shaft. Furnished complete, viz.: The outfit includes a cast iron box end with drive end projection for conveyor and gear and a short counter-shaft with gear and long enough outside of bearing to accommodate a sprocket wheel or pulley.

78N1598

For 4" Conveyor.....	\$13.85
For 6" Conveyor.....	17.85
For 9" Conveyor on 1½" pipe.....	21.75
For 12" Conveyor on 2" pipe.....	37.80
For 16" Conveyor on 3" pipe.....	88.20

Useful Information for Making Conveyor Boxes and Dimensions of Cast Iron Box Ends



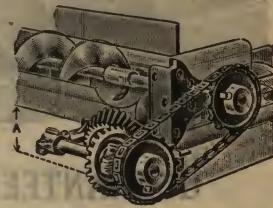
Boxes should be made of kiln-dried lumber, as any shrinkage causes the conveyor to run out of true. For 4" Conveyor Boxes, we recommend $\frac{1}{2}$ " lumber for 6 to 9", $1\frac{1}{2}$ ", 12" and larger $1\frac{3}{8}$ " to $1\frac{1}{4}$ ".

Table shows proper sizes of conveyor boxes

Size of Conveyor Inch.	A. Inch.	B. Bore Inch.	C. Inch.	D. Inch.	E. Inch.
3	2½	¾	4	⅞	2
4	3½	1	5	⅞	2½
5	4	1½	6	⅞	3
6	4½	1½	7	⅞	3½
7	4½	1½	8	⅞	4
8	4½	1½	9	1⅓	4½
9	6½	1½	10	1⅓	5
9	6½	2	10	1½	5
10	7	1½	11	1½	5½
12	9	2	13	1½	6½
12	9	3	13	1½	6½
14	9¾	2	15	1¾	7½
16	11	3	17	1¾	8½

Sizes in heavy type are standard.

Improved Right Angle Conveyor Drive



A device to drive conveyors running at right angles. The material conveyed drops from one conveyor to the other. No danger of a choke or clog.

Sizes and Net Prices

78N1577	Sizes and Net Prices
For 4" Conveyor.....	\$ 28.50
For 6" Conveyor.....	33.75
For 9" Conveyor on 1½" pipe.....	45.00
For 12" Conveyor on 2" pipe	71.25
For 16" Conveyor on 3" pipe	143.50

WOOD CONVEYOR BOXES

Made of dressed poplar lumber to the dimensions given above. The complete price of conveyor boxes is derived by adding together—prices of necessary conveyor with lining, hangers and couplings, wood box, 2 cast iron box ends, one tail projection, and one drive projection, 2 cast iron box ends, one tail projection, and one drive projection, 12 inches long and labor of assembling. When longer or shorter ones are wanted see additional price for foot charge. Prices include $\frac{1}{2}$ " cover on all sizes.

When countershaft box end is wanted, only one cast iron box end is required.



Steel Conveyor Box,
Stub Opening with
Flange.

78N1580

SIZES AND NET PRICES

Diam. of Conveyor Inches	Gauge of Steel Box	Gauge of Steel Cover	Size of Angle Irons Inches	Net Price Box only per Foot	Net Price Box with Cover Per Foot	Net Price Cast Iron Box Ends Each	Net Price Counter Shaft Box Ends Each	Net Price Conveyor Per Foot	Net Price of Cast Iron Saddles Each	Net Price Plain Openings Each
4	18	20	1½ x 1½ x 1½	\$2.10	\$2.55	\$3.00	\$15.75	\$1.50	\$0.80	\$1.00
4	16	18	1½ x 1½ x 1½	2.70	3.10	3.00	15.75	1.50	.80	1.00
4	14	16	1½ x 1½ x 1½	3.00	3.60	3.00	15.75	1.50	.80	1.00
6	16	18	1½ x 1½ x 1½	2.65	3.25	4.00	20.00	1.70	.95	1.15
6	14	16	1½ x 1½ x 1½	3.10	3.80	4.00	20.00	1.70	.95	1.15
6	12	16	1½ x 1½ x 1½	3.70	4.40	4.00	20.00	1.70	.95	1.15
9	16	18	1½ x 1½ x 1½	3.30	4.00	7.00	24.75	2.10	1.75	1.35
9	14	16	1½ x 1½ x 1½	3.80	4.60	7.00	24.75	2.10	1.75	1.35
9	12	16	1½ x 1½ x 1½	4.50	5.25	7.00	24.75	2.10	1.75	1.35
*12	16	18	2 x 2 x 1½	4.25	5.10	10.00	40.00	2.80	3.30	1.75
*12	14	16	2 x 2 x 1½	4.75	5.75	10.00	40.00	2.80	3.30	1.75
*12	12	16	2 x 2 x 1½	5.50	6.50	10.00	40.00	2.80	3.30	1.75

*Note.—Prices on Conveyor and on 2-inch Pipe.

Net Prices for Special Conveyor Box Openings

Diameter of Conveyor Inches	Stub Opening	Stub Opening with Slide	Stub Opening with Flange No Side	Rack and Pinion Slide
4	\$5.25	\$7.00	\$5.75	\$16.00
6	6.00	8.00	6.75	18.50
9	8.50	10.00	8.95	26.50
12	10.50	13.50	11.50	30.00

Dimensions of Standard Steel Conveyor Boxes

Diam. Conveyor	4	6	9	12
"A"	4½	7½	11	14½
"B"	4½	6½	10	13

Dimensions in inches.



SUPERIOR "D. P." ELEVATOR CUPS

GUARANTEED FREE DISCHARGE AT LOW OR HIGH SPEEDS

May be Spaced Closer on the Belt and Run at Higher Speeds than any other Bucket.
Will more than Double the Capacity over an Ordinary Elevator.

Superior "D. P." Elevator Cups are of a special design which allows them to be run at a higher speed than any other cups made. They can be placed close together (as the table shows) and still have a free discharge. With their use a special design of Elevator Head should be used which will prevent blowing and back lashing and when installed according to directions the result will be surprising. We will furnish blue print showing style of Head to use or make up Elevator Heads of design recommended on orders.

Superior "D. P." Elevator Cups are economical to use as your first cost will be cut down about 33½%. Elevators equipped with these Cups are almost one-half the size of an ordinary Elevator for the same capacity.

If you are having trouble with your present Elevators equip them with superior "D. P." Cups and your troubles with capacity, belt slippage, etc. will be ended.

Allows Elevators to be driven from speed line without an extra countershaft for reducing speed.

78N1603

SIZES, CAPACITIES AND NET PRICES

DIMENSIONS		Contents Cubic Inches	Space on Belt		Price Net Each	DIMENSIONS		Contents Cubic Inches	Space on Belt		Price Net Each
Width Inches	Projec. Inches		Flour Inches	Grain Inches		Width Inches	Projec. Inches		Flour Inches	Grain Inches	
2	2	4.50	6	6	\$0.17	5	5	80.00	11	9½-10	\$0.57
2½	2½	9.25	6	6	.21	7	5	112.00	11	9½-10	.65
3	3	17.00	7	6	.27	8	5	128.00	11	9½-10	.70
3½	3	19.75	7	6	.30	9	5	144.00	11	9½-10	.75
4	3	22.50	7	6	.32	10	5½	200.00	13	11	.87
4½	3	25.25	7	6	.34	9	6	216.00	14	12	.85
4	3½	32.00	7	6	.36	10	6	240.00	14	12	.90
4½	3½	36.00	7	6	.37	11	6	264.00	14	12	.96
4	4	40.00	9	8	.36	12	6	288.00	14	12	1.02
4½	4	45.00	9	8	.38	14	6	336.00	14	12	1.14
5	4	50.00	9	8	.39	11	7	330.00	15½-16	13-14	1.32
5½	4	55.00	9	8	.41	12	7	360.00	15½-16	13-14	1.42
6	4	60.00	9	8	.42	13	7	390.00	15½-16	13-14	1.52
5	4½	65.00	10½	9	.44	14	7	420.00	15½-16	13-14	1.62
6	4½	92.00	10½	9	.54	16	7	480.00	15½-16	13-14	1.84

**Comparative Table for Diameter and R. P. M. of Pulleys and Belt Speeds, Derived in Feet per Minute.
For Ordinary and Superior "D. P." Cups**

Diam. Inches	R.P.M.	F.P.M.	Diam. Inches*	R.P.M.	F.P.M.	Diam. Inches	R.P.M.	F.P.M.	Diam. Inches	R.P.M.	F.P.M.	Diam. Inches	R.P.M.	F.P.M.
8	250	525	14	180	658	20	140	732	36	90	847	54	70	995
*8	75	150	*14	50	180	*20	42	220	*36	38	358	*54	32	466
10	225	588	16	160	672	24	120	753	42	80	880	60	65	1020
*10	65	165	*16	48	200	*24	38	238	*42	36	395	*60	32	502
12	200	630	18	150	705	30	100	780	48	74	930	72	60	1130
*12	56	170	*18	44	207	*30	38	314	*48	34	427	*72	30	565

*Indicates Standard Pulleys and Belt Speeds on Ordinary Elevator Cups. Others, Regular Superior "D. P." Speeds.

TIN MILL, STEEL CORN AND HEAVY ELEVATOR BUCKETS



Tin Mill Buckets

As per lists below, the smaller sizes are made of Tin and the larger of smooth refined Steel; the ends are double seamed to the body by special machinery, which enables us to produce a bucket which for strength and smoothness of finish has no superior.

They are guarded with band iron firmly riveted to the body, making the bucket light but firm; the shape is especially adapted to discharge readily.

78N1579

Sizes and Net Prices

Width on Belt	Projec- tion	Net Price Each	Width on Belt	Projec- tion	Net Price Each
2	x	2	4	x	3½
2½			4½	x	3½
3	x	3	5	x	.20
3½	x	3	5½	x	.21
4	x	3	6	x	.22½

Style 1 Heavy Steel Elevator Buckets

All Styles and Sizes Furnished For Continuous and Inclined Belt Elevators
Prices on Application

have no superior.

78N1580

Sizes and Net Prices

Width on Belt	Projec- tion	No. of Bolt Holes	Capacity	Net Price Each
9	x	6	2½ quarts	\$0.50
10	x	6½	3 quarts	.63
11	x	7	3½ quarts	.70
12	x	7	4 quarts	.74
13	x	7	4½ quarts	.78
14	x	7	5 quarts	.81
15	x	7	5½ quarts	.88
16	x	7	6 quarts	.95
18	x	7	6½ quarts	1.03

Steel Corn Buckets

They are made similar to the Steel Grain Bucket, but of extra heavy material, and for the work for which they are intended they

ELEVATOR BUCKETS



Steel Grain Buckets, Regular Sizes

78N1581 No Further Discount

Width on Belt	Projection	Net Price, Each	Width on Belt	Projection	Net Price, Each
5	x 4	\$0.20	11 x 6		\$0.50
5½	x 4	.21	12 x 6		.55
6	x 4	.23	14 x 6		.63
7	x 4½	.28			
8	x 5	.31			
9	x 5	.35			
10	x 5½	.44			

For list on larger sizes, see "Warehouse Buckets."

Table Showing Carrying Capacity of the Steel Grain Bucket 12 inches Apart

Size	Speed 200' per min. No. Bu. per Hr.	Speed 300' per min. No. Bu. per Hr.	Speed 500' per min. No. Bu. per Hr.
5 x 4	250	371	625
6 x 4	275	412	687
7 x 4½	500	637	1062
8 x 5	600	900	1500
9 x 5	650	1012	1687
10 x 5½	850	1275	2125
11 x 6	1105	1725	2875
12 x 6	1300	1950	3250
14 x 6	1600	2400	4000
20 x 6	2275	3412	5687

Malleable Iron Buckets

Seamless, strong and smooth, rounded corners. Free delivery of material. Made in three styles, "A," "B" and "C." "A" for cement, coal, chemicals, pulp, etc. "B" for ores, stone, etc., in inclined elevators. "C" for sugar, clay and sticky materials.

Net Prices—78N1582

Length	Width	Depth	Cap. cubic in.	Cap. quarts	Price, Each
Style "A"					
4	2¾	3	16	.27	\$0.23
5	3½	3½	36	.62	.32
6	4	4¼	55	.95	.41
7	4½	5	85	1.47	.57
8	5	5½	115	1.99	.68
10	6	6½	204	3.00	1.09
12	6	6½	246	3.67	1.24
12	7	7½	332	5.00	1.43
14	7	7½	391	5.84	1.65
18	10	10½	1053	15.72	4.39
Style "B"					
4	1½	2¼	6	.10	\$0.19
8	3½	5	55	.95	.49
10	4	5½	107	1.85	.82
12	5½	7½	233	3.50	1.24
Style "C"					
8	4½	4	50	1	\$0.64
10	5	4	80	1.5	.90
12	5	4	100	2	1.01
16	7	5½	250	6.5	1.80

We Punch as Directed and Make no Extra Charge

Minneapolis Elevator Buckets

A Bucket particularly adapted to high speeds, with perfect discharge. With this Bucket the elevator head pulley may be run about 5 revolutions per minute faster than with others.

Wrought Iron Brace in Sizes 14 in. and Larger

Galvanized Cups furnished.

Prices on Application

78N1583—Net Prices

Size of Bucket, Inches	Price, each, Net				
Length	Projec. A	Depth B	Capa. Cu. In.	Black Iron	
3	3	3½	11	\$0.13	
3½	3	3½	13	.13	
4	3	3½	15	.13	
4½	3	3½	17	.14	
4½	3½	3½	23	.15	
5	4	4½	32	.18	
5½	4	4½	35	.19	
6	4	4½	38	.20	
7	4½	5	58	.25	
8	5	5½	80	.35	
9	5	5½	90	.40	
10	5½	6½	122	.55	
10	6	6½	150	.60	
10	7	7½	200	.75	
11	6	6½	165	.65	
12	6	6½	180	.68	
12	7	7½	240	.83	
14	6	6½	210	.88	
14	7	7½	280	1.05	
16	6	6½	240	.95	
16	7	7½	320	1.15	
18	6	6½	270	1.03	
18	7	7½	360	1.25	
20	6	6½	300	1.13	
20	7	7½	400	1.38	

SALEM BUCKETS

The most popular style of cups on the market for mill and elevator.

Most improved and up-to-date design. All the buckets 16 ga. and lighter, are spot welded. Replaces rivets. Strengthens the bucket, saves the belt and discharges perfectly.

Odd sizes, also Galvanized Cups furnished. Prices on application.

78N1584 Sizes and Net Prices

Size Bucket-Inches	Regular Gauge for Mill and Elevator Work	Medium Gauge for Ear Corn and Medium Duty	Center to Center Holes	No. Holes
	Price, Each	Gauge	Price, Each	
2½ x 2½	\$0.10	18	\$0.20	1½
3 x 2½	.10	18	.20	1½
3 x 3	.10	16	.29	1½
3½ x 2½	.10	16	1½	2
3½ x 3	.10	16	.31	2
4 x 3	.15	16	.35	2
4 x 3½	.15	16	.38	2
4½ x 3	.15	16	.39	2
4½ x 3½	.15	16	.40	2
5 x 3½	.19	16	.44	2
5 x 4	.19	16	.48	2
5½ x 4	.18	16	.39	2
6 x 4	.18	16	.40	2
7 x 4½	.24	16	.45	2
8 x 5	.30	16	.50	3
9 x 5	.32	16	.60	3
10 x 5½	.38	16	.69	3
10 x 6	.44	16	.73	3
11 x 6	.50	16	.78	3
12 x 6	.56	16	.82	4
14 x 6	.64	16	.84	4
12 x 7	.72	16	1.02	4
14 x 7	.76	16	1.04	4
16 x 7	1.06	16	1.08	5

Salem Buckets

With Low

Front

For handling malt, sugar, clay and other damp substances. Sizes, gauges and prices same as for regular "Salem" shape.

We can furnish any size and gauge. Prices on application.

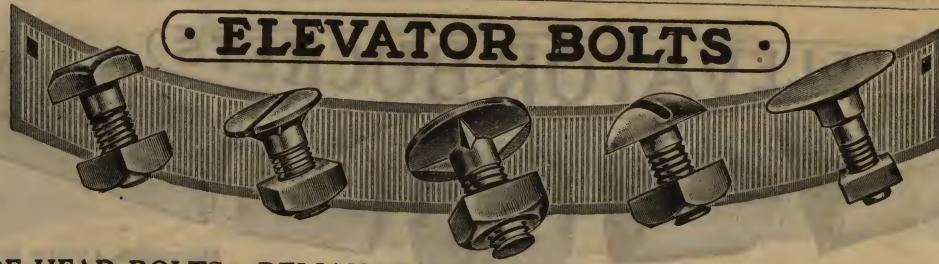
Extra Heavy Salem Buckets

Suitable for Ores, Coal, Broken Stone and Extra Heavy Substances. An extra charge is made of \$2.00 Net, on orders for quantities less than 100 of any one size.

78N1585 Sizes and Net Prices

Size Bucket	Price No. 14 Gauge Steel	Price No. 12 Gauge Steel	Price No. 10 Gauge Steel	Price No. 8 Gauge Steel	Price No. 6 Gauge Steel
6 x 4"	\$0.54	\$0.75			
7 x 4½"	.60	.83	1.03		
8 x 5"	.68	.93	1.15	1.36	1.56
9 x 5"	.81	1.12	1.38	1.63	1.88
10 x 5½"	.93	1.28	1.58	1.87	2.15
10 x 6"	.98	1.36	1.67	1.98	2.28
11 x 6"	1.05	1.45	1.79	2.12	2.44
12 x 6"	1.11	1.53	1.89	2.22	2.56
14 x 6"	1.13	1.56	1.93	2.28	2.63
16 x 6"	1.19	1.64	2.02	2.39	2.75
18 x 6"	1.24	1.71	2.12	2.50	2.88
20 x 6"	1.30	1.79	2.21	2.60	3.00
10 x 7"	1.25	1.73	2.13	2.52	2.90
11 x 7"	1.32	1.83	2.25	2.66	3.06
12 x 7"	1.38	1.90	2.35	2.77	3.19
14 x 7"	1.40	1.94	2.39	2.82	3.25
16 x 7"	1.46	2.01	2.48	2.93	3.38
18 x 7"	1.51	2.09	2.58	3.04	3.50
20 x 7"	1.51	2.16	2.67	3.15	3.63

• ELEVATOR BOLTS •



SQUARE HEAD BOLTS

For attaching Elevator Buckets to Link Belting.

NET PRICE—PER HUNDRED

78N1586

Size Bolt

Per 100

$\frac{1}{4} \times \frac{1}{4}$	\$1.70
$\frac{1}{4} \times 1$	1.70
$\frac{1}{8} \times \frac{3}{4}$	2.00
$\frac{1}{8} \times 1$	2.00
$\frac{3}{8} \times \frac{3}{4}$	2.40
$\frac{3}{8} \times 1$	2.40

RELIANCE ELEVATOR BOLTS

These bolts have slot in head for screw-driver and are corrugated on under side, making the best Elevator Bolt on the market.

NET PRICES PER BOX

(100 Bolts and Nuts to a box)

Carried in stock in following sizes:

78N1587	$\frac{1}{4} \times \frac{1}{4}$	\$0.85	$\frac{1}{4} \times 1$	\$0.90
	$\frac{1}{4} \times \frac{3}{4}$	.85	$\frac{1}{4} \times 1\frac{1}{4}$	1.00
	$\frac{1}{4} \times \frac{5}{8}$	.85	$\frac{1}{4} \times 1\frac{1}{2}$	1.10
	$\frac{1}{4} \times \frac{7}{8}$	.90		
	Any one size—less than 100 bolts, at each			.02

BUTTON HEAD BOLTS

For attaching Elevator Buckets to Link Belting.

NET PRICE—PER HUNDRED

78N1588

Size Bolt

Per 100

$\frac{1}{4} \times \frac{3}{4}$	\$1.50
$\frac{1}{4} \times \frac{5}{8}$	1.55
$\frac{1}{4} \times 1$	1.55
$\frac{1}{4} \times \frac{5}{8}$	.60
$\frac{1}{4} \times 1\frac{1}{4}$	.75
$\frac{1}{4} \times 1\frac{1}{2}$	.75
$\frac{3}{8} \times 1\frac{1}{4}$	1.65
$\frac{3}{8} \times 1\frac{1}{2}$	2.90

NORWAY FLAT HEAD ELEVATOR BOLTS

These bolts are forged from best quality Norway Iron. Head is flat and large in diameter, affording a great bearing surface on the belt, preventing the bolt from pulling through.

NET PRICE—PER HUNDRED

78N1589

Size Bolt Per 100 Size Bolt Per 100

$\frac{1}{4} \times \frac{3}{4}$	\$1.50	$\frac{1}{4} \times 1$	\$1.80
$\frac{1}{4} \times \frac{5}{8}$	1.55	$\frac{1}{4} \times 1\frac{1}{4}$	2.15
$\frac{1}{4} \times 1$	1.55	$\frac{1}{4} \times 1\frac{1}{2}$	2.25
$\frac{1}{4} \times \frac{5}{8}$	.60		
$\frac{1}{4} \times 1\frac{1}{4}$	.75		
$\frac{1}{4} \times 1\frac{1}{2}$	.75		
$\frac{3}{8} \times 1\frac{1}{4}$	1.65		
$\frac{3}{8} \times 1\frac{1}{2}$	2.90		

WOODEN CONVEYOR FLIGHTS

HARD MAPLE



SIZES AND NET PRICES

78N1590

SIZE	Square of Shank	Length of Shank	Net Price Per 100
$1\frac{1}{8} \times 1\frac{1}{8}$	11/32	$\frac{1}{4}$	\$3.00
$1\frac{1}{4} \times 1\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{4}$	3.25
$1\frac{1}{2} \times 1\frac{1}{2}$	$\frac{3}{8}$	$1\frac{1}{8}$	3.50
$1\frac{3}{4} \times 1\frac{3}{4}$	$\frac{15}{64}$	$1\frac{1}{4}$	4.75
2 $\times 2$	$\frac{15}{64}$	$\frac{1}{4}$	5.50
$2\frac{1}{4} \times 2\frac{1}{4}$	17/32	$\frac{1}{2}$	8.25
$2\frac{1}{2} \times 2\frac{1}{2}$	17/32	$\frac{1}{2}$	9.75
$2\frac{3}{4} \times 2\frac{3}{4}$	19/32	$\frac{1}{2}$	12.50
3 $\times 3$	$\frac{3}{4}$	$1\frac{1}{4}$	15.00



MALLEABLE IRON SOCKET WRENCHES

Malleable iron socket wrenches are almost indispensable for attaching elevator buckets to belting. They make the nuts easy to get at and tighten them quickly and easily. For $\frac{1}{4}$ inch bolts, taking $\frac{1}{2}$ by $\frac{1}{2}$ inch nut. Length 8 inches.

78E1595 Malleable Iron Sockets Wrench each..... \$.50

CAST STEEL PLAIN BRACES

1/2 Inch Steel



Steel Alligator jaws. Stained hardwood head and handle. A good brace at a moderate price. Nicely finished 8-inch sweep.

78E1596 Cast Steel Plain Brace, each. \$1.75 Complete with Socket for $\frac{1}{4}$ Bolts.

LEATHER WASHERS



Leather washers are a real protection and are used extensively on Cotton and Rubber Belts.

NET PRICE—PER HUNDRED

78N1591 For $\frac{1}{4}$ -inch bolts..... \$0.20For $\frac{3}{8}$ -inch bolts..... .25

STEEL GATES



Made of heavy sheet steel blades and round iron stems, one foot long.

SIZES AND NET PRICES

78N1592

Size of Gates Inches	Net Price Each	Size of Gates Inches	Net Price Each
8 x 10	\$1.50	14 x 18	\$5.40
8 x 12	1.80	14 x 20	5.75
8 x 14	2.50	16 x 18	6.50
10 x 12	2.60	16 x 20	7.00
10 x 14	2.75	16 x 24	7.25
10 x 16	3.00	18 x 20	7.50
12 x 14	3.75	18 x 24	7.75
12 x 16	4.25	18 x 28	8.50
12 x 18	4.75	20 x 24	10.00
14 x 16	5.00	20 x 30	12.00

Extra long stems furnished at extra price.

STEEL GUIDES

For Steel Gates

78N1594

Length Inches	Net Price Per Pair	Length Inches	Net Price Per Pair
12	\$1.65	28	\$3.15
16	2.10	32	3.45
20	2.40	36	3.75
24	2.70	40	4.25

ADJUSTABLE FEED AND BIN GATES

These feed gates can be furnished in either the lever and the ratchet style shown here or the rack and pinion style at the same price. Standard stems are for a spacing of ten feet from the bottom of the gate to the center of the quadrant on lever and ratchet style, or of the shaft on the rack and pinion style. Other lengths can be supplied to suit requirements. Gates are regularly made of $\frac{1}{4}$ inch steel.

State which style gate is wanted

SIZES AND NET PRICES

78N1597

Gate Size Inches	Bucket Size Inches	Price Complete Either Style
14 x 14	14 x 7	\$13.50
16 x 16	14 x 7	14.50
18 x 18	18 x 7	15.00
20 x 20	20 x 7	15.50

GENUINE "OSBORNE" BELT PUNCHES



We recommend this punch above any other tool or instrument for punching holes in rubber belts. Will outlast ten ordinary punches.

No better punch made.

No.	Size hole, inches	Price, each round hole
9	$\frac{1}{4}$	\$0.41
10	$\frac{9}{32}$	.42

We make up to order Wood Conveyors of all sizes and can be furnished complete with drive and tail gudgeons. Only the best hard maple flights used. Prices made on specifications.

GALVANIZED LOCK SEAM PIPE

THE PIPE WITH THE STRONGEST SEAM



We recommend our Galvanized Lock Seam Pipe for any purpose where sheet metal pipe is used. For blowing ventilating, surface irrigation, well casing, gravity, drainage, smoke-stacks and in elevators, flour mills, wood-working plants and factory equipment, it has no superior. It can also be used under pressure. When used for this purpose, the seams should be soldered. The special seaming process does not in any way injure the galvanizing. To avoid damage to the Lock Seam in case of rough handling, a rivet is placed through the seam at each end of the pipe sections. STANDARD LENGTHS 10 foot without cross seam. This pipe will add to the efficiency of any equipment. Lugs shown attached in the illustration are furnished at extra charge.

78N1660

SIZES AND NET PRICES

Size Inches	24 Gauge		22 Gauge		20 Gauge		18 Gauge		16 Gauge		14 Gauge	
	Wt. per 100 Feet	Price per 100 Feet	Wt. per 100 Feet	Price per 100 Feet	Wt. per 100 Feet	Price per 100 Feet	Wt. per 100 Feet	Price per 100 Feet	Wt. per 100 Feet	Price per 100 Feet	Wt. per 100 Feet	Price per 100 Feet
4 in.	139	\$17.25	168	\$21.25	200	\$24.75	...	...	...	...	...	...
5 in.	173	21.00	204	25.75	243	29.25	318	\$40.00	...	...	...	...
6 in.	199	25.00	239	30.50	283	35.50	369	48.75	453	\$59.50	...	...
7 in.	229	28.50	278	35.00	328	41.00	428	55.50	527	67.75	...	...
8 in.	260	32.25	316	39.50	375	46.25	489	62.50	600	76.25	770	\$93.50
9 in.	288	36.00	356	44.00	414	51.50	545	69.50	668	85.00	870	104.00
10 in.	318	40.00	388	48.75	460	56.75	600	76.50	736	93.25	956	114.25
11 in.	386	43.50	457	53.25	540	62.00	660	83.50	815	101.50	1040	124.50
12 in.	407	47.50	497	58.00	590	67.50	722	90.25	889	110.00	1125	134.50
13 in.	440	51.00	530	62.50	630	72.75	780	97.50	962	118.00	1205	145.00
14 in.	466	55.00	567	67.00	678	79.75	840	104.25	1030	127.00	1315	155.00

Lugs for attaching pipes together, when desired, are charged for extra. We can furnish this pipe with soldered seams or with riveted seams throughout. Prices on application.



PATENTED ONE-PIECE GALVANIZED ELBOWS

Smooth on Inside---Reinforced Joints---Great Strength

These special one-piece patented elbows are used in connection with our Lock Seam pipe. Through their special construction they have added strength, due to the double thickness of metal on the laps. The elbows are entirely smooth on the inside, and there is nothing to obstruct passage. Even the slowest moving grains will pass the joints readily. The best elbows on the market for any purpose where sheet metal pipe is used.

78N1662

SIZES AND NET PRICES EACH

Size Inches	Inside Throat Radius, Inches	45 Degrees			60 Degrees			75 Degrees			90 Degrees		
		24 Gauge	22 Gauge	20 Gauge									
4	12	\$0.55	\$0.65	\$0.80	\$0.60	\$0.75	\$0.90	\$0.65	\$0.80	\$1.00	\$0.75	\$0.90	\$1.10
5	12	.70	.85	1.00	.80	.95	1.10	.90	1.05	1.25	1.00	1.20	1.40
6	12	.80	.95	1.15	.90	1.15	1.30	1.05	1.25	1.50	1.15	1.40	1.60
7	12	1.05	1.25	1.50	1.20	1.45	1.70	1.35	1.60	1.95	1.50	1.80	2.15
8	12	1.30	1.55	1.85	1.50	1.80	2.10	1.65	2.05	2.35	1.85	2.25	2.65
9	12	1.45	1.65	2.10	1.60	1.95	2.40	1.80	2.15	2.70	2.00	2.40	3.00
10	12	1.50	1.75	2.30	1.75	2.10	2.65	1.95	2.30	2.95	2.15	2.55	3.30
11	12	1.70	1.90	2.50	1.95	2.20	2.85	2.20	2.45	3.25	2.45	2.75	3.60
12	12	1.85	2.10	2.80	2.10	2.40	3.20	2.35	2.70	3.60	2.60	3.00	4.00
13	14	2.50	2.90	3.75	2.85	3.30	4.30	3.20	3.70	4.85	3.60	4.15	5.25
14	14	2.85	3.35	4.35	3.30	3.85	4.95	3.65	4.30	5.60	4.10	4.80	6.20

Grain Spouts, Indicator Stands and Turn Heads



Flexible Grain Spout For Loading Cars

These spouts are used to load cars without shoveling and will work where there is little fall from bin. They have chain connections and will turn any angle. Special sizes made to order, any size or any length. In ordering give size of wooden spout to which you wish spout fitted.

NET PRICES EXTRA SECTIONS FOR FLEXIBLE SPOUTS

Diameter Spout Inches	THICKNESS OF STEEL				Length Section Adds to Spout
	18 Gauge	16 Gauge	14 Gauge	12 Gauge	
6	\$1.20	\$1.35	\$1.65	\$2.17	9 1/4"
8	1.50	1.72	2.10	2.77	9 1/4"
10	1.87	2.10	2.55	3.37	10 1/2"
12	2.17	2.47	2.92	3.90	10 1/2"

Extra Chain, per foot..... \$0.07 Extra Bolts, each..... \$0.06

CAST IRON TURN HEADS

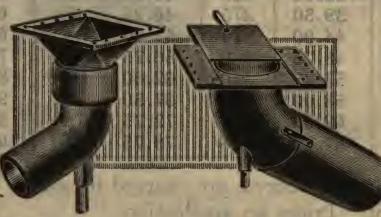
With Hopper.

It will be noticed from the illustration of turn-head spout that the elbow fits over the hopper bottom loosely and is supported by the rod independently of the hopper bottom. This prevents binding in case of unequal settling of the building.

The entire spout is made of cast iron and is very durable.

NET PRICE, INCLUDING HOPPER.

78N1550	No Further Discount.
7 inch diameter spout.....	Each, \$15.00
9 inch diameter spout.....	Each, 17.90
12 inch diameter spout.....	Each, 22.50



CAST IRON TURN HEADS

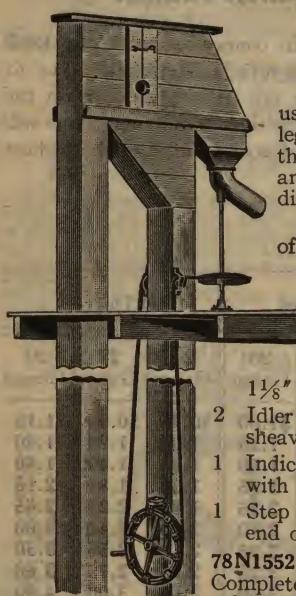
Adjustable Pattern.

Fig. 136

These Turn Heads are made with wrought steel adjustable spouts and cut-offs. The former are a great improvement over the old style, permitting the grain to be discharged at any desired angle.

They are much more durable than the ordinary sheet iron spouts and for continued hard service have no equal.

78N1551	NET PRICES—NO FURTHER DISCOUNT.
6-inch, each.....	\$11.25
8-inch, each.....	12.80
9-inch, each.....	16.75
10-inch, each.....	19.25
12-inch, each.....	\$25.50
14-inch, each.....	33.00
16-inch, each.....	45.00



WIRE ROPE INDICATORS

Wire Rope Indicators may be used in connection with elevator legs of almost any height, as they are very positive in action, and sometimes preferable to indicator stands.

The Standard Outfit consists of the following:

- 1 16-inch grooved indicator wheel with 8 numbers and with a take up and handle.

1 16-inch grooved wheel, 1 1/8" bore, for indicator Rod.

2 Idler Brackets with 5-inch idler sheaves for Wire-Rope.

1 Indicator Stub Rod to Connect with Turn Head, 3 feet long.

1 Step Box Casting to receive lower end of Indicator Stub Rod.

78N1552

Complete Outfit. Net..... \$16.50

3/16" Wire Rope Required for indicator is charged for extra, at..... \$0.05 per foot, net.

INDICATOR STANDS

Our Indicator Stands are of neat design and well made throughout.

78N1553 Net Prices

Complete with 6 to 8 Figures..... \$12.25

Extra Figures, each..... .30

Rings only, 6 to 10 Figures 5.00

Indicator Hoop and Rod

Including One Hoop with six bin numbers and twelve feet of one-inch pipe, with coupling.

78N1554

Price, Net each..... \$5.50

Indicator Rods

We are prepared to furnish Indicator Rods any desired length; also the necessary couplings.

78N1555

Net Prices

1 -inch Indicator Rods.....	Net per foot, \$0.25
1 1/4-inch Indicator Rods.....	Net per foot, .30
1 1/2-inch Indicator Rods.....	Net per foot, .35
1 -inch Couplings.....	Net each, .40
1 1/4-inch Couplings.....	Net each, .50
1 1/2-inch Couplings.....	Net each, .60



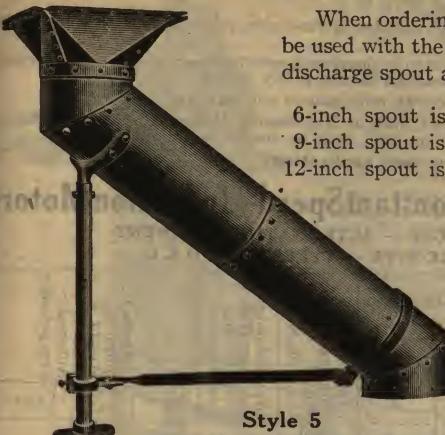
STEEL GRAIN DISTRIBUTING SPOUTS

When ordering, always state the size of buckets which will be used with the spout, or, if possible, give inside measures of discharge spout at head of elevator and size of indicator rod.

6-inch spout is suitable for buckets 6 to 9 inches long.

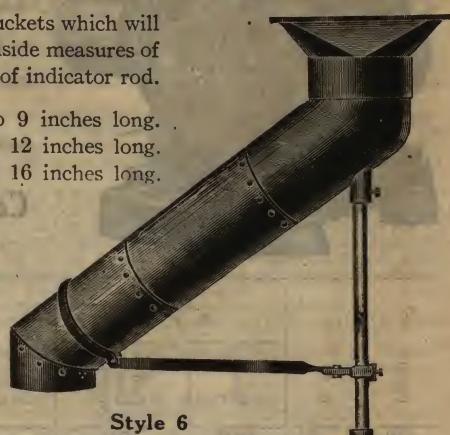
9-inch spout is suitable for buckets 9 to 12 inches long.

12-inch spout is suitable for buckets 12 to 16 inches long.



Style 5
STEEL HOPPER AND
TURN HEAD

78N1557



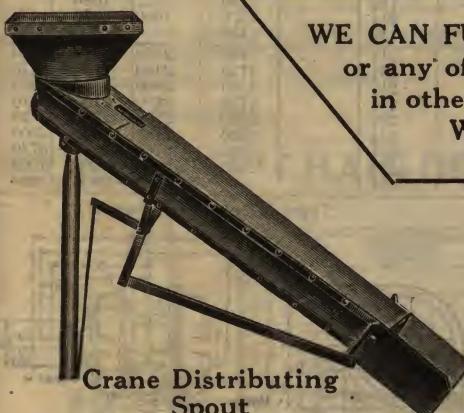
Style 6
CAST IRON HOPPER
AND TURN HEAD

SIZES AND NET PRICES

Diameter of Spout Inside Inches	Price, Style 5, All Steel	Price, Style 6, with Cast Iron Hopper and Elbow	Center of Rod to Center of Discharge, Styles 5 and 6, Inches	Top of Hopper to Bottom of Spout, Styles 5 and 6, Inches	Size of Socket for Indicator Rod Inches
6	\$13.50	\$17.95	30	33	7/8
9	18.00	23.95	36	41 1/4	1
12	22.50	29.90	42	47	1 1/4
14	24.00	49.50	48	54 3/4	1 1/4

WE CAN FURNISH LARGER SPOUTS
or any of the Spouts listed here
in other dimensions if desired.

Write For Prices.



Crane Distributing Spout

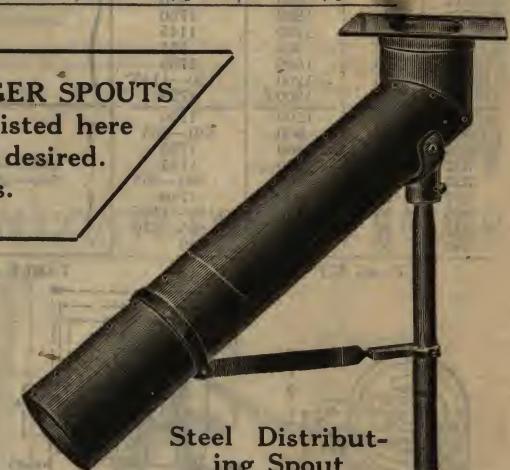
Style No. 4

The bottom of this Spout is made of cast iron, where the grain falls onto it from the elevator. The hopper and the balance of the spout are made of heavy sheet steel.

The Indicator Rod shown is not furnished unless charged for extra.

78N1558 SIZES AND NET PRICES

8-inch Crane Spout, for bulk grain.....	\$22.50
10-inch Crane Spout, for bulk grain.....	25.50
12-inch Crane Spout, for bulk grain.....	37.50



Steel Distributing Spout

Style No. 7

All steel, and quite inexpensive. It is especially popular for the heads of elevators where wheat, oats, seeds or mill stuffs are the principal products to be handled. This style distributor can be used with any of our different styles of indicators.

78N1559 6-inch, style 7 spout, net price..... \$12.25

78N1560 8-inch, style 7 spout, net price..... 14.00

78N1561 9-inch, style 7 spout, net price..... 15.80

SWIVEL STEEL GRAIN SPOUTS

These are substantial and very serviceable spouts, made of heavy sheet steel, and pivoted in such a manner that they may be turned so as to spout the grain in any direction. The discharge opening of these spouts is 6 1/2 inches. In connection with these spouts, round steel piping can be used, which makes a very cheap and convenient conducting pipe.

In ordering these Spouts please give outside measurements of spout to which you wish to attach same.

78N1562 Price, each complete with pivot rings and brackets, and with steel hopper to attach to wooden spout, but without gate..... \$7.50



GENERAL ELECTRIC MOTORS

We are agents for General Electric Motors, Generators, Compensators, Starting Boxes, Switches, etc.

We can supply Motors of any style, Speed or Horse-power, in any number of Volts, Cycles or Phase, to suit your requirements.

In ordering, specify the horse-power to be developed, whether direct or alternating current; the number of Volts, cycles, phase, speed, and the size pulley desired.

All motors are furnished complete with rails, pulleys and starters.

We can also furnish special motors, such as Ball-bearing Motors, High Speed Motors, Low Speed Motors, Back Geared Motors, etc., made up special to order.

Prices and further information upon application.

Continuous Rated—Constant Speed—Induction Motors

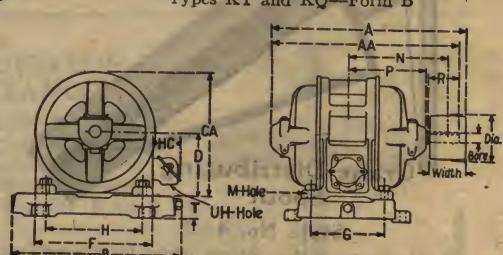
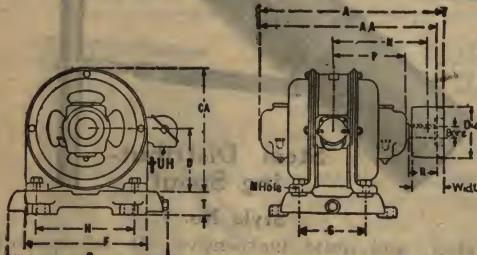
3-PHASE — 60-CYCLE — ALTERNATING CURRENT
SQUIRREL CAGE TYPE — TYPES KT AND K O

Frame	H. P.	Speed R. P. M.		Sync.	Pull Load (approx.)	VOLTS	Standard Pulley Dimension Inches			(Approximate) Shipping Weight With Hand Starter	(Approximate) Shipping Weight With Hand Compensator	120 v.	440 v. 550 v.	(Approximate) Shipping Weight With Hand Automatic Compensator
		Diam.	Belt Width				Diam.	Belt Width	Bore					
710	1/2	1800	1700				3 1/2	2	3/4	125				
711	1/4	1200	1120				3 1/2	2	3/4	130				
712	1	1800	1700				3 1/2	2	3/4	130				
712	1	1200	1150				4 1/2	3	1	140				
712	1 1/2	1800	1720				4 1/2	3	1	140				
713	1 1/2	1200	1150				4 1/2	3	1	160				
713	2	1800	1730				4 1/2	3	1	160				
730	2	1200	1150				4 1/2	3	1	200				
730	3	1800	1720				4 1/2	3	1	200				
731	3	1200	1155				4 1/2	4	1 1/8	230				
731	5	1800	1720				4 1/2	4	1 1/8	230				
732	5	1200	1155				5 1/2	4 1/2	1 1/4	255				
750	7 1/2	1800	1750				5 1/2	4 1/2	1 1/4					
751	7 1/2	1200	1160				7	5	1 1/8	450	780			
751	10	1800	1740				7	5	1 1/8	511	840			
752	10	1200	1160				8	6	1 1/8	510	840			
302	10	900	855				8	6	1 1/8	560	890			
752	15	1800	1760				8	6	1 1/8	560	890			
302	15	1200	1155				8	6	1 1/8	750	1080			
312	15	900	855				8	7	1 1/8	760	1090			
753	20	1800	1760				8	6	1 1/8	880	1210			
312	20	1200	1145				8	7	1 1/8	660	990			
322	20	900	855				10	7	2 1/4	880	1210			
302	25	1800	1735				8	6	1 1/8	1360	1690			
322	25	1200	1150—1145				10	7	2 1/4	750	1080			
312	30	1800	1725				10	7	2 1/4	1370	1600	3070		
326	30	1200	1150				8	7	1 1/8	1130	1800			
332	30	900	840—855				10	7	2 1/4	1490	2170	3190		
323	40	1800	1735				10	9	2 1/4	1770	2450	3470		
332	40	1200	1145				10	7	2 1/4	1380	2060	3080		
336	40	900	860—855				10	9	2 1/4	1770	2450	3470		
327	50	1800	1740				12	10	2 1/4	2220	2700	3720		
336	50	1200	1150—1155				10	7	2 1/4	1500	2180	3200		
342	50	900	865—870				12	10	2 1/4	2030	2760	3730		
346	50	720	680				13	12	2 1/4	2300	2980	4000		
							14	14	3 1/8	2600	3280	4300		

Types KT and KO

TABLE OF DIMENSIONS

Types KT and KQ—Form B



Frame	DIMENSIONS IN INCHES												
	A	AA	B	CA	D	F	G	H	M	N	P	R	T
710	13 3/8	13 1/8	13 15/16	9 1/2	4 3/4	9 1/2	5 1/2	7 1/2	17	6 3/4	5 7/16	2 3/16	2 1/4
711	13 3/8	13 2/8	12 15/16	9 1/2	4 3/4	9 1/2	6	7 1/2	17	7	5 11/16	2 3/16	2 1/4
712	17 1/16	16 5/16	13 11/16	9 1/2	4 3/4	9 1/2	6 1/2	7 1/2	17	8 11/16	6 9/16	3 1/8	2 1/4
713	17 9/16	16 13/16	16 5/16	9 1/2	4 3/4	9 1/2	7	7 1/2	17	8 15/16	6 13/16	3 3/8	2 1/2
730	18 3/8	18 1/8	16 3/16	12 1/2	6 1/4	12 1/2	6 1/4	10 1/4	17	9 9/16	7 11/16	3	2 1/4
731	21 1/16	19 11/16	16 5/16	12 1/2	6 1/4	12 1/2	7	10 1/4	17	10 11/16	8 1/16	3 3/8	2 1/4
750	23 1/16	21 1/8	16 5/16	12 1/2	6 1/4	12 1/2	8	10 1/4	17	11 11/16	8 3/16	3 3/4	2 1/2
751	26 1/8	24 1/2	20 21/32	15 5/8	7 1/4	14 3/4	8 1/4	11 1/4	17	13 1/4	10 1/4	4 1/2	2 3/4
752	28 1/2	26 1/8	23 5/8	15 5/8	7 1/4	14 3/4	9 1/4	11 1/4	17	14 1/4	10 5/8	4 2/8	3 1/4
753	29 5/8	27 1/2	23 5/8	15 5/8	7 1/4	14 3/4	10 3/8	11 1/4	17	15	11 3/8	4 2/8	3 1/4
302	28 7/8	26 3/4	23 5/8	17 5/16	8 3/4	14 3/4	11 1/2	11 3/8	17	14 11/16	10 13/16	4 2/8	3 1/4
312	32 3/8	30	25 1/2	18 11/16	9 1/2	17 1/2	11	14 3/4	17	16 1/16	10 13/16	4 2/8	3
322	34 1/8	32 15/16	29 3/8	21 1/4	11	20 3/4	11	17 1/2	17	16 7/16	12 1/16	5 1/8	3
326	35 11/16	34 13/16	29 3/8	21 1/4	11	20 3/4	12 7/8	17 1/2	17	17 3/4	13 1/8	6 3/8	3 3/4
327	35 11/16	34 13/16	29 3/8	21 1/4	11	20 3/4	12 7/8	17 1/2	17	14 1/16	6 3/8	3 3/4	3 1/4
332	37 15/16	35 7/16	33 1/8	25 1/4	12 3/4	24 1/4	14	20 3/4	1	19 1/16	14	7 1/8	3 1/2
336	42 9/16	39 13/16	33 1/8	25 1/4	12 3/4	24 1/4	16 1/2	20 3/4	1	21	15 13/16	7 7/8	3 1/2
342	46 1/16	42 7/16	27 5/8	29 1/4	14 3/4	27 1/4	15	23 3/4	1	22 15/16	16 3/4	8 3/8	3 1/2
346	50 3/4	45 7/8	32 5/8	29 1/16	14 3/4	27 1/4	17	23 3/4	1	25 5/16	18 1/16	9 3/8	3 1/2

"Niagara" Employees Elevator

An Employees Elevator is almost indispensable in a mill or factory where it is necessary for the employees to go from one floor to another and it will quickly pay for itself in the time saved.

We offer the "NIAGARA" Employees Elevator because we believe that with its heavy construction and several features not found on any other machine of this type, it is the safest, most durable and satisfactory employees elevator on the market.

The machine consists of a wide belt running over cast iron pulleys at the top and bottom of an all steel frame work which extends from the bottom to the top of the building. Attached at intervals on the belt are steps of proper size to carry a person and handles on which to hold. The machine runs constantly at a moderate speed so that persons may step on and off at the different floors with convenience and safety. One side ascends and the other descends.

The Guides are of 3 inch channel steel which insure a rigid frame which cannot get out of line.

The steps are of wood, enclosed in a frame of 1½ inch channel steel, and are fastened to the belt at two different points by flat band steel, which carry an iron trunion on each end. The trunions run on the inside of the channel steel guides and allow the steps to pass over the pulleys smoothly and noiselessly. **THIS IS THE ONLY ELEVATOR HAVING THE STEP ATTACHED TO THE BELT AT TWO DIFFERENT POINTS**, the others having all wood steps which fasten at one point on the belt, flap over when passing over the pulleys and tend to pull the rivets through the belt.

THE HEAD BRIDGE TREE is of cast iron instead of wood as used in other elevators.

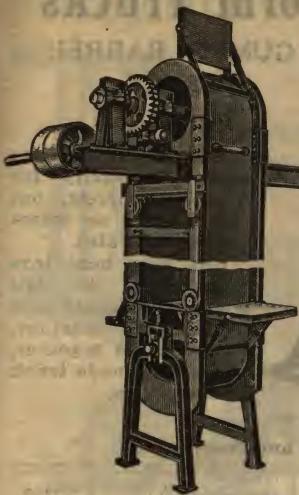
THE WORM GEARS are cast iron in a dust proof case. Phosphor bronze and cast steel worm gears furnished when desired.

The head and foot pulleys are 20 inches in diameter. Tight and loose pulleys are 14 x 6 inches. Speed of driving pulley 340 R. P. M. Diameter of drive shaft 1¼" — Can be run in either direction. Distance from floor to center of Boot Pulley is 30 inches.

78E1668

SIZES AND NET PRICES --- F. O. B. FACTORY.

Size No.	12'	14'
Width of Rubber Belt (4-ply)		
Price 50 ft. elevator (with belt)	\$650.00	\$845.00
Price per foot extra (with belt)	5.20	5.20
Price of 50 foot elevator (without belt)	520.00	650.00
Price per foot extra (without belt)	2.60	2.60



"CONSTANT" BALL-BEARING SAFETY MANLIFT

Designed to carry the operators of Grain Elevators and Mills to and from basement to cupola instead of using the stairway, but can be used in warehouses, etc., where only one or two persons use it. The same number of pounds going up must come down as it is a counterbalance elevator. No expense or power to run it. Only a slight pull on the hand-rope is necessary after you step on the foot-lever. You can stop the car at any floor or between floors by removing your foot from the foot-lever.

The Brakes are independent of one another and are provided with a set screw to take up the wear. The Sheave has a deep groove and Ball Bearings. The Ropes are $\frac{1}{8}$ inch, best grade. The Safety Catch prevents the car from falling in case of an accident to the rope. The Equalizing Weights are of 5-10-15 and 20 pounds each, thus giving you a range of from 5 to 50 pounds for the car. The counter-weight has a long stem which enables you to add sectional weights to make it heavier when necessary. It weighs 250 pounds and we furnish two 10-pound sectional weights.

The car weighs 70 pounds, has a platform 28 x 30 inches and a space of 6 feet, 6 inches; requires 9 feet 6 inches space from the top floor to top of the sheave and 40 inches from guide support to outside of the counter-weight.

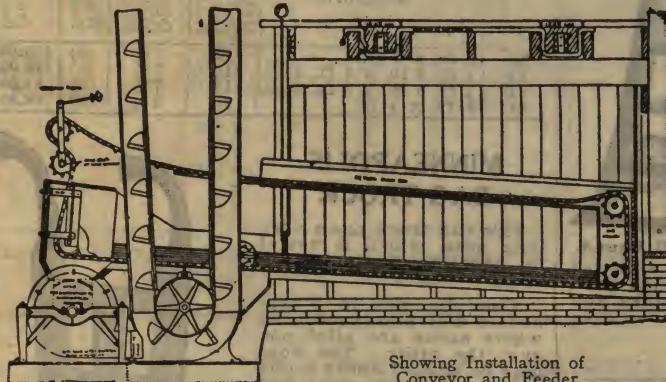
We furnish the car, guides, ropes, sheave and weights as shown in cut, for one man. Extra weights at small cost. You furnish the supports or uprights for the guides. Full instructions for installing and operating sent with each shipment.

78F1670 Complete outfit, 50 foot lift between floors..... Net \$80.00

More or less, per foot..... Net .40



"CONSTANT" CHAIN DRAG GRAIN CONVEYOR AND FEEDER



PATENTED

Showing Installation of
Conveyor and Feeder

Designed for conveying and feeding ear corn automatically from a dump sink, or crib, to the elevator boot, but will handle all kinds of grain. Provided with a clutch sprocket and is started and stopped by shifting the lever. The chain will not carry the grain back as in the old belt conveyor, and it cleans the sink so thoroughly that other grain may follow without mixing.

The work is done on the lower chain, as the top chain returns through a box or covering which keeps the grain from it. By the use of this feeder, the drive-way can be lowered and still retain the same amount of storage under the dump, as the sink is hopped only from two sides at about one-third pitch. The trough is lined with sheet iron 12 in. wide on each side of the steel track, which we furnish.

It is almost impossible to feed a sheller satisfactorily by gravity or drag belt, but with this Feeder a certain amount of corn is taken to the sheller hopper all the time, thus increasing the capacity of the sheller and buckets, saving power and choke-ups.

The grain can be elevated on inclines as high as 8 ft. in 32 ft.

The capacity is gauged by the speed, which is from 35 to 40 revolutions per minute of the Feeder-head shaft for ear corn and from 50 to 75 for small grain, according to the capacity desired. We use No. 26-77 Chain for ear corn and No. 28-77 for small grain, or No. 26-77 for all kinds of grain with double drive. For a double drive, figure an extra clutch sprocket required size, slow speed for ear corn and fast speed for small grain.

NET PRICE

78F1672. This outfit includes the feeder head, shaft, 2 pillow blocks, collar, 10-tooth head driver, back box, shafts and wheels, 14-tooth clutch sprocket, clutch hub and lever, 10 feet track, 25 feet chain No. 26-77 or No. 28-77 and a Universal Tightener..... \$75.00

Extra No. 26-77 Chain, per foot..... \$0.40 Extra No. 28-77 Chain, per foot..... \$0.50 Extra Feeder Track (3 pieces steel) per ft., \$0.20

Extra No. 26-77 Chain, per foot..... \$0.40 Extra No. 28-77 Chain, per foot..... \$0.50 Extra Feeder Track (3 pieces steel) per ft., \$0.20

“Gump’s” Bag, Warehouse and Platform Trucks

GUMP'S FIG. 50 BAG TRUCK

A well made, light and handy bag truck. Made of hardwood, with four cross bars, securely fastened. Has a strong, heavy iron nose, with a $4\frac{1}{2}$ -inch projection, and is so balanced it will stand alone without support. Nose protects over the wheels to prevent the load from rubbing. Length 42 inches, width at nose $11\frac{1}{4}$ inches, width at handle $18\frac{1}{2}$ inches, diameter of wheels, 6 inches.

Weight, 23 Pounds.

78E1678—Price.....Each \$5.00



Fig. 50.

GUMP'S HEAVY BAG TRUCK FIG. 41

This truck was designed for handling large sacks, has an extra heavy iron nose with long projection, and guaranteed in every way.

Length 48 inches width at nose 15 inches, width at upper cross bar 20 inches, 1 inch steel axle with turned bearings, iron wheels $7\frac{1}{2}$ inches diameter, 2-inch face. Weight 60 pounds.

78E1680—Price....Each \$7.75



Fig. 41.

GUMP'S WAREHOUSE AND STORE, TRUCKS



Fig. 30. Half Bound.



Fig. 31. Full Bound.

These trucks are firmly bolted together, have forged axles, with turned bearings, steel nose, an extra good quality of hardwood, with steam turned handles and well made in every way.

Price and Description

78E1682

Fig. 30. Half Bound

Size	Weight Pounds	Length Handle Inches	Diam. Wheels Inches	Width Ins.	Price Each
0W	32	42	6	18	\$ 5.95
1W	43	48	$7\frac{1}{2}$	19	6.90
2W	60	52	$8\frac{1}{2}$	20	8.75
3W	77	56	$9\frac{1}{2}$	22	12.75
4W	110	62	$10\frac{1}{2}$	24	15.75

78E1684

Fig. 31. Full Bound

Size	Weight Pounds	Length Handle Inches	Diam. Wheels Ins.	Width Ins.	Price Each
21W	50	48	$7\frac{1}{2}$	19	\$ 7.90
22W	68	52	$8\frac{1}{2}$	20	10.25
23W	87	56	$9\frac{1}{2}$	22	14.50
24W	125	62	$10\frac{1}{2}$	24	18.00



GUMP'S BARREL TRUCK

Full Bound.

This truck was designed especially for handling barrels, but can be used as warehouse truck also.

Has four bent iron cross bars, is full bound, has forged axle with turned bearings, firmly bolted together, and a well made truck in every way.

Fig. 34.

78E1686—Price and Description

Size	Weight Pounds	Length Handle Inches	Diam. Wheels Inches	Width Ins.	Price Each
71W	50	48	$7\frac{1}{2}$	19	\$ 8.50
72W	75	52	$8\frac{1}{2}$	20	10.50
73W	90	56	$9\frac{1}{2}$	22	14.50

GUMP'S PLATFORM TRUCKS

A good, strong, heavy truck for carrying heavy loads, adapted for use in mills, warehouses and feed stores.



Fig. 70.

78E1688—Price and Description

Size	Size of Platform	Height to Top of Platform Inches	Diam., Wheels, Inches	Weight, Pounds	Price, Each
80	2 ft. x 3 ft.	12	$7\frac{1}{2}$	90	\$15.00
82	2 ft. 4 in. x 3 ft. 4 in.	12	$7\frac{1}{2}$	115	16.00
83	2 ft. 6 in. x 3 ft. 6 in.	12	$7\frac{1}{2}$	125	17.50
84	3 ft. x 4 ft.	13	$8\frac{1}{2}$	150	18.50

MINNEAPOLIS BAG TRUCK

This bag truck has a very long nose, which is useful in handling large, bulky sacks.

Also for use in Warehouses and Storage Rooms where sacks are piled one over the other. The nose may be slipped under a pile of three or four sacks and the pile may be transported to another place, wagon or car.

Made very strong with wrought iron nose.

Length of handles 42 inches, width of truck at nose $11\frac{1}{4}$ inches, length of nose 9 inches. Width at upper cross-bar 17 inches. Wheels, 6 inches diameter.

Weight, 30 lbs.

78E1690—Price, net, each.....\$6.95

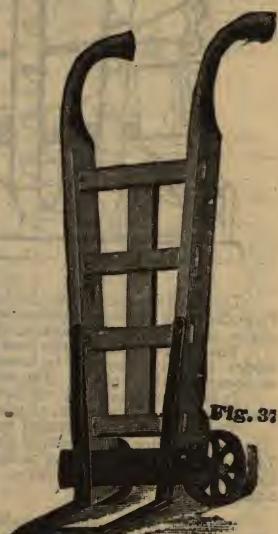


Fig. 35.

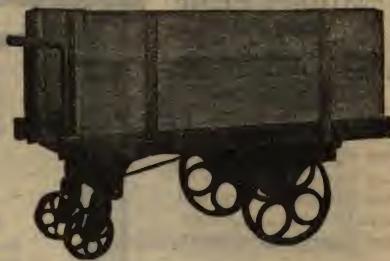
"Reynolds" Improved Platform Trucks

For Mills, Stores and Warehouses

PATENT BALL BEARING CASTER. LIGHT RUNNING. TURNS EASILY EVEN WHEN HEAVILY LOADED. HEAVY CONSTRUCTION FOR HARD SERVICE.



Fig. 40, without Box



Showing Box Attached to Truck

This truck will be found especially adapted to the wants of merchants, millers, and warehouse men. Jobbers in almost any line will find by its use a great saving of time and expense. We sell them to fit elevators or scales, and thus do away with transferring from truck to elevator or scales, and vice versa.

The **Reynolds Truck** has many points of excellence and superiority over the common trucks, as will be readily seen by comparison.

The front wheels being casters, the truck **will turn in its own length**, and can be run on elevator or scales from any angle. The running gear is so arranged that it can be run on any dormant warehouse scale of one ton capacity. The wheels are so large in diameter, and so much of the weight of the load comes directly over them, that one man can carry twice as much on it as upon any other truck made.

Also made with iron or wood racks for wholesale houses, factories, etc., and also with boxes made with sides to let down, or with removable ends and sides.

78E1692

SIZES AND NET PRICES

Size	Size of Platform in Feet*	Diameter of Wheels Inches	Diameter of Casters Inches	Height to Top of Platform Inches	Capacity in Lbs.	Weight Lbs.	Price Each Net
0	2 x 3	12	6	14	1,200	125	\$24.00
1	2 x 4	12	6	14	1,200	152	25.00
3	2½ x 4	12	6	14	1,200	172	26.00
4	2 x 5	12	6	14	1,200	161	26.00
5	3 x 4	12	6	14	1,200	173	27.00
6	2½ x 5	12	6	14	1,200	175	27.00
8	3 x 5	12	6	14	1,200	192	29.00
9	2 x 4	18	9	19	3,000	217	30.00
11	2½ x 4	18	9	19	3,000	229	31.00
13	2½ x 4½	18	9	19	3,000	237	32.00
15	3 x 4	18	9	19	3,000	246	33.00
16	2½ x 5	18	9	19	3,000	243	33.00
18	2 x 5	18	9	19	3,000	230	32.00
19	2 x 6	18	9	19	3,000	240	33.00
20	2½ x 6	18	9	19	3,000	255	34.00
21	3 x 5	18	9	19	3,000	255	35.00
22	3 x 6	18	9	19	3,000	270	36.00
23	3 x 8	18	9	19	3,000	310	40.00

78E1694 —Box 20" high, as illustrated, to fit any size truck. Price \$3.00 per foot length of truck. Wood or Steel Racks furnished on application. *Trucks 4 inches longer over all.

GUMP'S TUBULAR STEEL BARROW

The tray is pressed from one piece of steel without seams or rivets. The edges of the trays are flanged and turned over a $\frac{1}{4}$ -inch steel rod. This rod prevents the tray from breaking at the edge and makes it very much stronger. They are made to dump forward, and are so constructed that at the dumping point they will not run back on the operator. They are well bolted and braced, and made of the best material and painted.

78E1696

Price and Description

No.	Gauge Steel	Weight, Pounds	Capacity, Cubic Ft.	Dimensions Top of Tray	Price, Each
A 2	15	70	3	29 x 32	\$9.35
A13	13	75	3	29 x 32.	9.85
A14	12	90	3	29 x 32.	11.50
A15	14	86	4½	29 x 36	10.50
A16	12	95	4½	29 x 36	12.00
A18	14	100	6	33 x 42	13.35



Fig. 281
17-inch Wheels
1¼ in. Tread.

GUMP'S PORTABLE PLATFORM SCALES

Comply with Inspection Laws of Every State.

Every Scale Sealed and Fully Guaranteed.

ACCURATE

SENSITIVE

DURABLE.

"Millers Pride"

Portable
Platform Scales
Single or Double Beam
Ball Bearing

Made in sizes with capacities from 600 to 1,500 lbs. Can be furnished with or without wheels. Warranted to be first-class and guaranteed against imperfections.



For general use and built to conform to the Gump Standards.

Self-Aligning Ball Bearings Pivots in Parallel Planes, and many other important features are reasons why our scales invariably give the user a lasting satisfaction.

The concentric lever connections afford an even and steady transmission of load to the beam regardless of the position of weight on the platform. An uneven floor or frame out of level does not disturb the accuracy of a Gump's Scale.

78E1731.

SIZES AND NET PRICES

Size	Capacity Pounds	Platform Inches	Net Price, Single Beam, with Wheels	Net Price, Single Beam, no Wheels	Net Price, Double Brass Beam, with Wheels
601	600x $\frac{1}{4}$	16 $\frac{1}{2}$ x24 $\frac{1}{2}$	\$24.00	\$22.50	\$29.00
801	800x $\frac{1}{2}$	17 x25	27.50	25.00	32.50
1001	1000x $\frac{1}{2}$	18 x26	31.00	29.50	37.50
1201	1200x $\frac{1}{2}$	18 $\frac{1}{2}$ x26 $\frac{1}{2}$	35.00	33.50	42.00
1501	1500x $\frac{1}{2}$	18 $\frac{1}{2}$ x26 $\frac{1}{2}$	40.00	38.50	47.00

Extra for Bag Rack on all sizes, \$3.50.

"Reliable"
Grain Scales

Single, Double or
Weightless Beam
Plain Bearing

Made in sizes with capacities from 1,000 to 1,800 lbs. Furnished with or without wheels. Especially designed for flour mills, feed stores, etc.



Built heavy, strong and with a large roomy platform.

Has a large platform and is built from heavy material to withstand severe strain and heavy duty. In ordering state whether single, double or weightless beam is desired.

78E1734.

SIZES AND NET PRICES

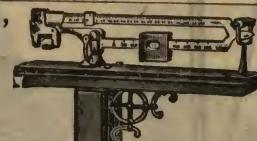
Size	Capacity, Pounds	Platform, Inches	Net Price, with Wheels	Net Price, no Wheels
59	1000x $\frac{1}{2}$	32x42	\$65.00	\$60.00
60	1200x $\frac{1}{2}$	33x43	70.00	65.00
61	1800x $\frac{1}{2}$	33x43	75.00	70.00

Extra with double brass beam, each.....\$3.50

Extra with double weightless brass beam, each.....6.00

"Always Ready"

Weightless
Double Beam
Platform Scales
Ball Bearing



Made in sizes with capacities from 600 to 1,200 lbs.

Furnished with double beam only, with or without wheels. A strong reliable scale which never fails to please.



The upper bar is marked in $\frac{1}{2}$ pound marks to 100 pounds, and the lower bar is graduated and notched in 100-pound notches to the full capacity.

78E1732.

SIZES AND NET PRICES

Size	Capacity, Pounds	Platform, Inches	Net Price, with Wheels	Net Price, no Wheels
603	600x $\frac{1}{2}$	16 $\frac{1}{2}$ x24 $\frac{1}{2}$	\$34.00	\$32.50
803	800x $\frac{1}{2}$	17 x25	36.50	35.00
1003	1000x $\frac{1}{2}$	18 x26	40.00	38.50
1203	1200x $\frac{1}{2}$	18 $\frac{1}{2}$ x26 $\frac{1}{2}$	42.50	40.00

Extra for Bag Rack on all sizes, \$3.50

"Always Ready"
**Cheese Factory
or Creamery
Scales**

Three Beam
Ball Bearing



Made in size with capacities from 710 to 1,110 lbs.

Made also in five beam with capacities from 1 to 600 lbs. Furnished with or without wheels.

All figuring is eliminated with this scale. The weighing beam is made up of three bars, the upper bar is graduated in $\frac{1}{2}$ lb. marks to 100 lbs.; the center bar for handling tare is marked to 100 lbs.; while the third bar or lower bar is marked with 100 lb. notches to the full capacity.



You can read a beam on top of the cap much easier than under it. The beam for tare eliminates all figuring.

78E1738.

SIZES AND NET PRICES

Size	Capacity, Pounds	Platform Inches	Net Price, 3 Bar Beam, with Wheels	Net Price, 5 Bar Beam with Wheels
604	710	16 $\frac{1}{2}$ x24 $\frac{1}{2}$	\$45.00	.....
804	910	17x25	50.00	.....
1004	1110	18x26	54.00	.....

Single and Double Beam Dormant Warehouse and Hopper Scales

GUMP'S DORMANT WAREHOUSE SCALES

With Single Wood Pillar. High Grade in Construction and Finish

In situations where a large amount of weighing is done in one spot, and especially where goods are handled on trucks, Scales set with their platform level with the floor are very convenient. The materials weighed do not have to be lifted to the platform of the Scale and back again, and loaded trucks, barrels or casks may be rolled on the platform and weighed very quickly. The 2,500 lb. size has the pillar placed on the long side of the scale, so that trucks may be rolled across the long way without coming against the pillar. Same high grade construction and finish as the Double Iron Column, listed below.

Net Price—Single Pillar and Cap, Complete 78E1740 78E1741

Size	Capacity Pounds	Platform Inches	Net Price, Single Beam	Net Price, Double Beam
88	2500 x $\frac{1}{2}$	36 x 37	\$82.80	\$92.80
89	3500 x $\frac{1}{2}$	42 x 44	94.50	104.50
90	5000 x $\frac{1}{2}$	44 x 53	135.00	145.00



DOUBLE PILLAR DORMANT WAREHOUSE SCALE

Double Iron Column—Highest Grade Construction and Finish

Our Dormant Scales are well made, the woodwork, including the platform, single pillar and cap, is all hardwood.

The platform is seasoned oak, finished in the natural color and varnished.

The double iron pillars are finished in black, and gold striped. The levers and castings are all made extra heavy, of the best class of iron, and on the very latest improved patterns.

The beams are solid brass, extra heavy, with sliding poise.

Net Prices, Double Iron Pillar and Cap



78E1742 78E1743

Size	Capacity Pounds	Platform Inches	Net Price Single Beam	Net Price Double Beam
91	2500 x $\frac{1}{2}$	36 x 37	\$94.50	\$104.50
92	3500 x $\frac{1}{2}$	42 x 44	112.50	122.50
93	5000 x $\frac{1}{2}$	44 x 53	153.00	163.00

Note.—We can furnish the Double Iron Pillar Scale with Short Pillars, the beam placed above the cap, at same prices as on regular pattern.

GUMP'S DORMANT HOPPER SCALE Highest Quality Construction and Finish

The beam is marked in $\frac{1}{2}$ -pound marks to 110 pounds.

Prices do not include hopper. Opening is made, however, and shipped complete, ready to install.

In construction and finish our Dormant Hopper Scales are unexcelled, pivots and bearings are of the best imported tool steel, beams are solid brass, Extra Heavy, with sliding poise, levers and castings, Extra Heavy, and of the latest pattern, and guaranteed first-class in every respect.

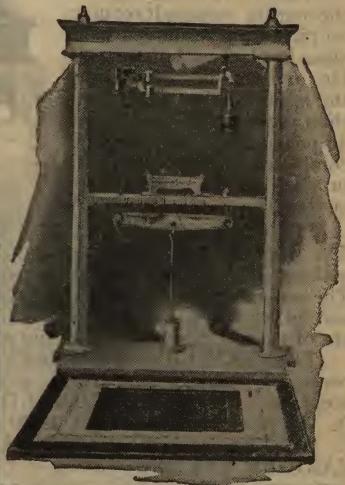
Improved Combination Grain Beam



For Dormant Hopper Scales. Full capacity on beam. Requires no loose weights. Upper beam revolves, is graduated in bushels for wheat, corn, barley and oats. Upper beam in 100 lbs. graduated to full capacity of scale; lower beam in lbs to 400 lbs.

78E1744. Net price added to price of Double beam scale for 40, 60 and 100 bu. scales.
Net

\$25.00



78E1746 Net Prices—Single Wood Pillar

Number	Capacity, Bushels	Capacity, Pounds	Platform, Inches	Net Price, Single Beam
108	40	2400	36 x 37	\$82.80
109	60	3000	42 x 44	94.50
110	100	6000	44 x 53	126.00
111	125	7500	44 x 53	144.00
112	150	9000	44 x 53	157.50

78E1747 Net Price—Double Iron Column

Number	Capacity, Bushels	Capacity, Pounds	Platform, Inches	Net Price, Single Beam
113	40	2400	36 x 37	\$94.50
114	60	3000	42 x 44	112.50
115	100	6000	44 x 53	144.00
116	125	7500	44 x 53	162.00
117	150	9000	44 x 53	175.50

Note.—We can furnish the Double Iron Column, with short columns, the beam above the cap, if so desired at same prices as on regular pattern. Sizes up to 1600 bushel capacity—prices on application.

Pit and Pitless Wagon and Stock Scales

**GUMP'S PIT DOUBLE TRUSS GRAIN, STOCK
AND WAGON SCALE**

Accurate---Reliable
Easily Installed
Plan Furnished with
Each Scale for Installing



Double Trussed Levers--Double Brass Beam
Fully Warranted and Guaranteed Accurate



Built of High
Grade Material
For Heavy
Service.

Gump's Double Trussed Pit Wagon and Stock Scale is the highest type of pit scale on the market. It is constructed of the finest material throughout. Double trusses run the full length of the levers, and all levers are hung in specially constructed bearings so there is no friction. FULLY WARRANTED AND GUARANTEED ACCURATE.

Prices include scale with double brass beam box or office fixtures (size which is wanted in ordering), and regular extension lever. Longer extension lever can be furnished at extra charge. When wanted state length. Prices on application. When wanted with Office Fixtures instead of Beam Box, add \$10.00 extra to prices.

78E1755

SIZES, NET PRICES, ETC.

Size	Capacity	Size of Platform	Net Prices	Size	Capacity	Size of Platform	Net Prices
144	3 Tons	8 x 14 feet	\$100.00	154	6 Tons	8 x 22 feet	\$180.00
145	4 Tons	8 x 14 feet	117.00	148	8 Tons	8 x 14 6/12 feet	182.00
146	5 Tons	8 x 14 feet	136.50	151	8 Tons	8 x 16 4/12 feet	185.00
147	6 Tons	8 x 14 feet	156.00	155	8 Tons	8 x 22 feet	210.00
150	6 Tons	8 x 16 4/12 feet	172.00	156	10 Tons	8 x 22 feet	235.00

We can furnish this scale with steel frame. Prices on application.

"GUMP'S" U. S. STANDARD ALL STEEL FRAME PITLESS SCALE

Double Compound Beam
No Loose Weights
Total Depth Only 9 Inches
Fully Guaranteed

The most popular scale on the market because it requires no pit. Can be moved from place to place with little trouble, and the elevation above the ground is but little more than a pit scale. It requires no mechanic to install and is complete. All the customer supplies are the nailing strips and platform planks.

IT IS ALL STEEL EXCEPT THE PLATFORM AND BEAM BOX, and is most solidly and rigidly constructed. The sides are 9 inch and the ends 8 inch solid steel channels bolted together at each corner with heavy angle irons, making it impossible to give in any way. The joist supports for the platform planks are 6 inch solid steel I beams. The scale is built to stand the most severe strain. THE ROCKER LEVERS are heavy gray iron fitted with heavy carbon hardened steel knife edges resting on a rocker chair bolted firmly on the oscillating end channels. THE FEET are of carbon hardened steel, and attached to each end of the I beams by heavy iron lugs.

THE ARM LEVER is bolted to the rocker levers and runs direct to the Beam Box Rod, doing away with the unnecessary bearings and greatly lessening the friction. Each scale is carefully tested and is guaranteed absolutely accurate. LUMBER REQUIRED. Fourteen planks, 2 x 12 x 8 ft.; two timbers, 2 x 4 x 13 ft.; two timbers, 2 x 3 x 8 ft. Shipping weight, about 1,300 lbs. Scales Nos. 78E1770 to 1774 take larger timber dimensions.

GUMP'S SCALES ARE GUARANTEED TO COMPLY WITH ALL THE WEIGHING LAWS OF THE VARIOUS STATES.

78E1756	4 tons capacity with 8 ft. x 14 ft. platform... Price, net, \$135.00	78E1770	8 tons, 10x18' ... \$300.00
78E1757	5 tons capacity with 8 ft. x 14 ft. platform... Price, net, 140.00	78E1776	10 tons, 10x18' ... 315.00
78E1758	6 tons capacity with 8 ft. x 14 ft. platform... Price, net, 155.00	78E1774	15 tons, 10x18' ... 330.00
78E1759	Gump's SPECIAL Compound Beam which carries entire capacity of scale on beam. No loose weights. Reading from 2 lbs. to capacity of scale. When desired, add to regular price of scale.....		\$ 25.00



Setting Up Plan Furnished With Each Scale.

WEIGH BOOKS

We can furnish weigh books containing 100, 600 or 1,200 certificates.

Prices on application.

U. S. STANDARD TEST WEIGHTS

Made of Cast Iron, accurately sealed.
Capacity, 50 pounds.
Net price..... Each \$5.50



Automatic and Wagon Dump Scales

"HOEPNER" AUTOMATIC SCALE

Two Compartment Gravity Type
Guaranteed Absolutely Accurate

Used for weighing and registering the amount of grain which passes through the scale in a given time.

In GRAIN ELEVATORS—for loading cars.

In FLOUR MILLS—To check amount of wheat to the Rolls.

In CORN MILLS—To check amount of corn to the Grinders.

Also used in Rice Mills, Breweries, etc.

With the use of this scale the Mill owner or operator knows the exact quantity of grain being handled, and by reference to his books can locate any shrinkage as soon as returns are in, whereas without an Automatic Scale the shrinkage could not be determined until the elevator or storage bin was empty.

The scale is equipped with an automatic register which tallies each dump of the machine. When the weighing is concluded the exact weight is determined by reading the register.

It is made entirely of metal and every part is keyed in their respective positions so they cannot shift or be disarranged by constant use.

All "Hoepner" scales are sealed to U. S. Standard weights and are so designated that they can be tested in all places where they may be installed. Test weights are always furnished with this scale.

Guaranteed to work up to every claim made for them, and we hold ourselves liable at all times to replace any part showing any defects in workmanship or material. All capacities based on wheat.

NOTE

Always purchase a scale large enough to meet the required capacity, as it is better to make one or two weighings a minute than five or six, therefore less wear on the knife edges of the scale will prolong its life. A large quantity can be weighed more accurately than several small ones, as in numerous weighings there is a chance of a marginal error which in a day's run would make quite a loss.

Plans for Erecting Furnished with Each Scale.

78E1761 SIZES AND NET PRICES

No.	Hopper Cap'y Bushels	Height Inches	Length Inches	Width Inches	Bushels per Hours Net	Price
J	½	24	30	18	60	\$236.00
K	1	34	46	20	120	295.00
L	2	40	46	24	240	380.00
M	4	48	46	34	480	430.00
N	6	56	46	34	720	532.00
O	10	64	68	36	1200	742.00

"Gump's" Controllable Wagon Dump Scales

Complete with Controllable
Dump and Double Brass Beam.

Gump's Controllable Dump Wagon Scales are furnished Complete with Patent Dump (except timbers) with building plan, ready to install.

This combination of Scale and Dump has only ten main bearings, while similar devices have from eighteen to twenty-two. This affords the least amount of friction, which makes this scale very sensitive and accurate.

This controllable feature renders practicable the combination of dump and scale on one platform or foundation, so that the wagon may be driven upon the scale, weighed, dumped and re-weighed, thus avoiding the annoyance and delay occasioned by the old style methods, the motion is so smooth and free from concussion or jar that there is no injury done to the wagon dump or scale.

Platform, 8 x 16 feet, 4½ inches.

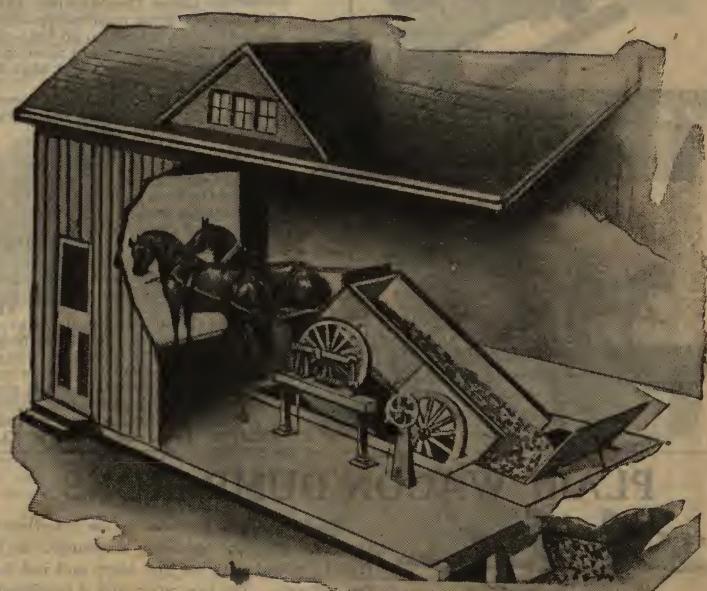
Capacity, 6 tons.

Furnished with Either Office Fixtures or Beam Box.

78E1762 Net Price, Complete with Controllable

Dump

\$255.00



Always Under Perfect Control of the Operator

WAGON AND TRUCK DUMPS AND DUMP IRONS

ALL IRON OVERHEAD WAGON DUMP

Roller Bearings--Easily Operated--Strong, Durable

The illustration here shows the all-iron overhead wagon dump as it is regularly furnished. It is built very heavy and strong for the most severe service, and is undoubtedly the best and most economical overhead dump on the market.

The hollow steel shaft is 6 inches in diameter and 10 feet long. THE SPROCKET WHEEL AND HOISTING CHAINS are securely fastened on the shaft and the chains have large hooks which can be hooked into any link. THE BOXES ARE ROLLER BEARING, which makes the dump very easily operated. THE GEARS in the all-iron frame have a lock to hold at any place desired and to prevent any danger of the load dropping back until released. In the power dump a friction brake is supplied to control the dump. The combined hand and power dump has heavier frame and gears, also extended shaft on which a double flange face pulley can be placed to connect with the same type of pulley below, on which is a loose belt. We furnish a swinging tightener which is fastened on the floor to work against this belt when operating the dump.

SIZES AND NET PRICES

78E1763 Hand Power All Iron Overhead Wagon Dump.....	Each	\$75.00
78E1764 Combined Hand Power and Power Overhead Dump, with Extended Shaft 1 $\frac{1}{2}$ inches, and One Swinging Tightener....	Each	90.00
78E1765 Swinging Tightener only.....	Each	20.00

NO LUMBER OR TIMBER INCLUDED IN THESE PRICES

CONTROLLABLE WAGON DUMP

Always Under Perfect Control of the Operator

We furnish our Controllable Wagon Dump separate from the scale, supplying building plans, which enables the dump to be used in connection with other scales. They are made in two sizes, "Standard" and "Special." The "Standard" Dump is made with a shaft 6 feet, 9 ins. long, a length that will permit of the dump post being set on the side of an 8-foot platform. The "Special" Dump is regularly made with a shaft 8 feet 3 inches long, a length that will permit of the dump post being set back 18 inches from the side of an 8-foot platform, but the length of the shaft can be increased to permit of the dump post being set back any distance from the side of the platform up to 36 inches.

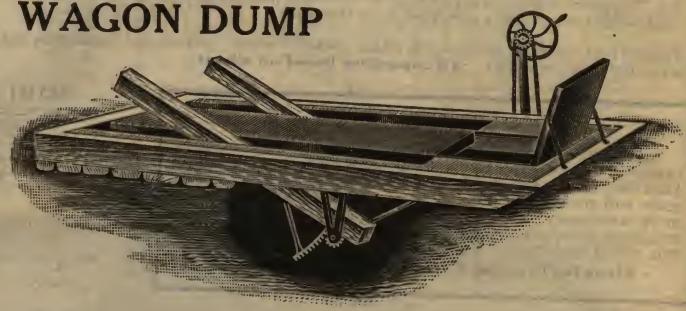
78E1766 Net Price, "Standard" Wagon Dump, Complete. Per Set.....

78E1767 Net Price, "Special" Wagon Dump, Complete. Per Set.....

Net Price For Extension Shaft beyond 8 feet 3 inches long, for use on "Special" Dump, per foot or fraction thereof.....

\$75.00
85.00
2.00

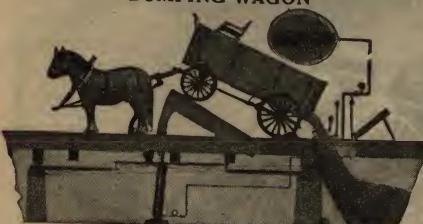
NO LUMBER OR TIMBER INCLUDED IN THESE PRICES.



DUMPING TRUCK



DUMPING WAGON



GLOBE COMBINATION AUTO TRUCK AND WAGON DUMP

Simple—Reliable—Practical.

The Globe Combination Auto Truck and Wagon Dump is simple in construction, having only three main parts—the Compressor, Tank and Cylinder—it is absolutely safe, as every part is built to 20 tons capacity which is several thousand pounds more than the heaviest load that would drive into your elevator.

It is a great time saver as it will dump a load clean in less than three minutes.

THE CYLINDER.

By means of this simple powerful Air Arm, the Globe Wonder Arm, which is pivoted at the bottom, lifts either the truck or wagon and sled section of the platform at the immediate wish of the operator.

THE PLATFORM.

The incline or "jack-knife" type of platform comprises really two platforms, one within the other, both being pivoted on a hollow shaft at the entering end. This is considered the very best engineering practice, as it raises the front wheels in a manner similar to driving a wedge under them and at the same time forms a rigid support because the timbers are firmly secured at one end.

COMPRESSED AIR EQUIPMENT.

To produce Compressed Air, a Curtis No. 4, 3x3 $\frac{1}{2}$ upright air compressor is furnished, which can be operated by any power already being used in the mill or elevator. It can also be operated by a separate motor, if desired.

THE INSTALLATION.

The Globe Combination Auto Truck and Wagon Dump can be installed in any drive-way, regardless of the width, length, height or depth, on any scale, regardless of make, type or size. The reason for this is that our Tilting Power Cylinder, which is 10 inches in diameter, is the only part of the equipment which is it necessary to place beneath the platform. The construction of the platform is such that it can be lessened in both width and length to fit any individual building.

Specifications and general information furnished on application.

78E1770 Price complete, F. O. B. Iowa Factory..... \$400.00

PLAIN WAGON DUMP IRONS

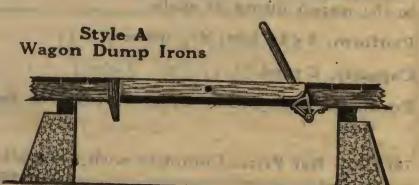


Style A Wagon Dump Irons.

78E1768 Net Price Per Set (Irons only, Style A)..... \$39.00

78E1769 Net Price Per Set (Irons only, Style B)..... 42.50

Style A
Wagon Dump Irons

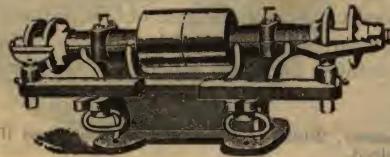


Emery Grinders and Wheels, Saw Mandrels and Gummers

BENCH EMERY GRINDERS



Showing Style Nos. 2, 3 and 4



Showing Style No. 19 with Tight and Loose Pulleys

78E1720 Description and Net Prices

Style.....	2	3	4	19
Length Arbor, inches.....	14	18	25	30
Bearings, inches.....	7/8x2	1 1/8x3	1 1/8x5	1 1/8x5
Pulleys, inches.....	2 1/4x2	4x3	4 1/4x4	4x3
Diameter Arbor, inches.....	3/4	1	1 1/4	1
Weight, pounds.....	22	42	85	65
Net Price.....	\$8.25	\$13.50	\$23.50	\$21.50

CROWN SAW GUMMER



Style 09. Crown Saw Gummer

Will carry one wheel 12x1 1/4 inch, or smaller, provided with adjustable rest, has long bearings, well babbed and in every way a first-class tool.

Dimensions and Net Price

Arbor to table	6 3/4 inches
Diameter base	8x9 1/2 inches
Length arbor	13 1/2 inches
Diameter arbor	3/4 inch
Pulley	3 1/2x2 1/2 inches
Weight (about) .....	.25 pounds
78E1722 Net price (without wheel)	\$7.95

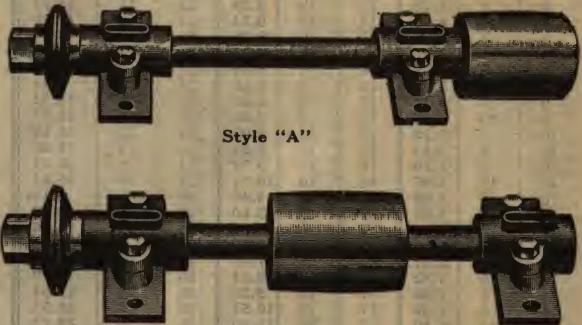
CIRCULAR SAW MANDRELS

78E1724

Sizes and Net Prices

No.	Length, Inches	Diam., Arbor	Diam., Pulley	Face Pulley	Diam., Collar	Hole in Saw	Net Price Each
0	16 1/2	7/8	2	3	2	3/4	\$5.75
1	16 1/2	1 1/8	2 1/2	3 1/2	3	1	6.25
2	19	1 1/8	3	4	3	1 1/8	7.65
3	21 1/2	1 1/8	3 1/2	4 1/2	3 1/2	1 1/4	8.65
4	24	1 1/8	4	5	3 1/2	1 1/8	10.00
5	26	1 1/8	4 1/2	5 1/2	4 1/2	1 1/8	11.00
6	28	1 1/8	5	6	5	1 1/8	11.30
7	30 1/2	1 1/8	5 1/2	6 1/2	5 1/2	1 1/8	13.00
8	33 1/2	1 1/8	6	7	6	1 1/2	16.00
9	37	1 1/8	7	8	6	1 1/8	21.00
10	41	1 1/8	8	8	6	1 1/8	24.50

Unless otherwise ordered we will send mandrel with pulley on right hand side, Style "A," with left hand thread. State style wanted.



Style "B"

"ELCO" EMERY WHEELS

Perfect Balance
Fast Cutting



Made with Either Flat Face, Bevel Face or Round Face.

GIVE CATALOG NUMBER WHEN ORDERING

These wheels are perfectly balanced, fast cutting and made to suit the purpose for which you intend using them. In ordering be sure to state purpose for which wheels are to be used, giving speed, diameter of wheel, thickness, size hole and shape of face.

We can furnish any other standard make of emery or corundum wheels desired. Prices on application.

Intermediate diameter and thicknesses take next higher price.

78E1726 Flat Faced Emery Wheels.

78E1728 Bevel Faced Emery Wheels.

78E1730 Round Faced Emery Wheels.

Diam. in Inches	Thickness of Wheels in Inches									
	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2
2	\$0.30	\$0.38	\$0.45	\$0.50	\$0.53	\$0.65	\$0.73	\$0.80	\$0.88	\$0.93
3	.40	.50	.60	.73	.83	.93	1.05	1.15	1.25	1.35
4	.55	.70	.88	.98	1.13	1.28	1.40	1.55	1.70	1.85
5	.75	.95	1.13	1.33	1.50	1.70	1.90	2.08	2.28	2.45
6	.95	1.20	1.45	1.70	1.95	2.23	2.48	2.70	2.98	3.25
7	1.15	1.48	1.80	2.15	2.48	2.80	3.15	3.45	3.88	4.10
8	1.35	1.78	2.20	2.60	3.05	3.45	3.90	4.30	4.73	5.15
9	1.55	2.08	2.60	3.15	3.70	4.20	4.75	5.30	5.83	6.35
10	1.80	2.45	3.10	3.75	4.45	5.10	5.75	6.40	7.05	7.70
12	2.10	3.00	3.90	4.75	5.65	6.55	7.45	8.35	9.23	10.10
14	2.45	3.60	4.80	5.95	7.10	8.25	9.45	10.60	11.75	12.90
16	2.85	4.35	5.80	7.30	8.80	10.25	11.75	13.25	14.73	16.20
18	3.30	5.15	7.00	8.85	10.70	12.55	14.40	16.25	18.08	19.90
20	....	6.15	8.40	10.70	12.95	15.25	17.50	19.80	22.08	24.35

For Corundum Wheels add 10% to Net Prices.



General design of
Sizes over 20" diameter

Oneida Pressed Steel Split Pulleys

Every Pully Guaranteed for Double Belt Duty

Oneida Pulleys are strong because steel is the strongest material of its weight known to science. They are re-inforced at every vital point, insuring absolute rigidity and durability. They run in practically perfect true and balance and will not break or fly to pieces when operated at high speeds. They are stronger than Cast iron pulleys of three times their weight, far more sightly and durable than wood pulleys, and will develop more power and stand harder usage than either one. The Oneida Pulley has no seam through the center of its face, like other steel pulleys, thereby lessening the area of belt contact. It has a perfect oval (not angle), crown, insuring maximum belt adhesion. They are the easiest pulleys to install and the safest and most economical to operate.

No. 78M102

Including One Standard Bushing For Each Pulley—In Ordering State Diameter, Width of Face, Size of Shaft and If Crown or Straight Face Pulley is Desired.

Diam. In.	Face In.	Price Each	Diam. In.	Face In.	Price Each	Diam. In.	Face In.	Price Each	Diam. In.	Face In.	Price Each	Diam. In.	Face In.	Price Each	Diam. In.	Face In.	Price Each
6	3	\$2.80	14	6	\$5.23	20	8	\$ 9.12	32	8	\$16.45	42	18	\$55.78	56	16	\$76.50
6	4	2.93	14	8	5.99	20	10	10.20	32	10	19.12	42	20	62.15	56	18	88.61
6	5	3.18	14	10	6.83	20	12	12.11	32	12	22.82	44	6	24.86	56	20	101.36
6	6	3.44	14	12	7.65	20	14	13.00	32	14	29.03	44	8	30.28	58	6	51.00
7	3	2.87	14	14	8.50	20	16	14.36	32	16	35.40	44	10	35.06	58	8	55.46
7	4	3.06	14	16	9.56	22	3	5.52	32	18	41.11	44	12	40.16	58	10	60.56
7	5	3.37	15	3	3.95	22	4	7.27	32	20	46.21	44	14	45.90	58	12	66.61
7	6	3.57	15	4	4.63	22	5	8.07	34	4	12.24	44	16	51.95	58	14	73.63
8	3	2.93	15	5	4.93	22	6	8.74	34	5	13.39	44	18	58.64	58	16	81.91
8	4	3.19	15	6	5.57	22	8	10.20	34	6	14.66	44	20	66.30	58	18	94.03
8	5	3.44	15	8	6.50	22	10	11.98	34	8	18.49	46	6	28.05	58	20	106.78
8	6	3.69	15	10	7.48	22	12	14.28	34	10	21.68	46	8	33.15	60	6	54.19
8	8	4.20	15	12	8.29	22	14	16.57	34	12	25.50	46	10	38.25	60	8	59.92
8	10	4.76	15	14	9.14	22	16	18.10	34	14	31.24	46	12	42.71	60	10	65.66
9	3	3.06	15	16	10.20	24	3	6.37	34	16	38.25	46	14	49.09	60	12	71.40
9	4	3.31	16	3	4.21	24	4	7.56	34	18	43.99	46	16	54.82	60	14	79.05
9	5	3.57	16	4	4.89	24	5	8.50	34	20	48.83	46	18	61.20	60	16	87.34
9	6	3.82	16	5	5.18	24	6	9.31	36	4	13.51	46	20	68.86	60	18	99.45
9	8	4.33	16	6	5.86	24	8	11.22	36	5	15.17	48	6	31.24	60	20	112.20
9	10	4.88	16	8	7.01	24	10	13.32	36	6	16.57	48	8	35.70	62	8	61.92
10	3	3.19	16	10	8.03	24	12	16.19	36	8	20.40	48	10	41.44	62	10	71.65
10	4	3.44	16	12	8.92	24	14	19.25	36	10	24.35	48	12	45.90	62	12	81.56
10	5	3.70	16	14	9.77	24	16	22.31	36	12	28.69	48	14	52.27	62	14	91.42
10	6	3.95	16	16	10.75	24	18	25.43	36	14	33.79	48	16	57.37	62	16	101.96
10	8	4.46	17	3	4.46	26	4	8.12	36	16	41.31	48	18	63.75	62	18	112.43
10	10	5.01	17	4	5.10	26	5	8.92	36	18	47.17	48	20	73.95	62	20	123.22
11	12	5.48	17	5	5.52	26	6	10.16	36	20	52.27	50	6	34.74	64	8	65.02
11	3	3.31	17	6	6.19	26	8	12.24	38	4	16.57	50	8	40.16	64	10	74.97
11	4	3.57	17	8	7.46	26	10	14.53	38	5	17.55	50	10	45.26	64	12	85.09
11	5	3.82	17	10	8.54	26	12	18.10	38	6	18.49	50	12	49.72	64	14	95.15
11	6	4.08	17	12	9.56	26	14	22.31	38	8	22.44	50	14	56.10	64	16	105.90
11	8	4.59	17	14	10.54	26	16	26.52	38	10	26.39	50	16	63.75	64	18	116.62
11	10	5.10	17	16	11.60	26	18	30.73	38	12	31.58	50	18	71.40	64	20	127.50
11	12	5.86	18	3	4.72	28	4	9.18	38	14	36.34	50	20	81.60	66	8	68.21
12	3	3.57	18	4	5.42	28	5	9.94	38	16	43.99	52	6	39.52	66	10	78.37
12	4	3.93	18	5	5.95	28	6	10.96	38	18	50.04	52	8	43.35	66	12	88.70
12	5	4.08	18	6	6.50	28	8	13.13	38	20	55.14	52	10	48.45	66	14	98.98
12	6	4.53	18	8	7.90	28	10	15.43	40	4	17.85	52	12	53.55	66	16	109.95
12	8	4.91	18	10	9.05	28	12	19.46	40	5	19.34	52	14	58.65	66	18	120.87
12	10	5.48	18	12	10.20	28	14	24.22	40	6	20.40	52	16	66.94	66	20	132.05
12	12	6.50	18	14	11.26	28	16	29.32	40	8	24.22	52	18	76.50	68	10	81.90
12	14	7.65	18	16	12.32	28	18	34.30	40	10	28.69	52	20	86.70	68	12	92.44
12	16	8.71	19	3	4.93	30	4	10.20	40	12	34.13	54	6	42.71	68	14	102.93
13	3	3.69	19	4	5.74	30	5	10.96	40	14	39.52	54	8	47.81	68	16	114.11
13	4	4.08	19	5	6.37	30	6	11.98	40	16	46.88	54	10	52.27	68	18	125.29
13	5	4.42	19	6	7.01	30	8	14.66	40	18	52.91	54	12	57.37	68	20	136.68
13	6	4.78	19	8	8.61	30	10	16.91	40	20	59.29	54	14	63.11	70	10	85.59
13	8	5.46	19	10	9.56	30	12	21.04	42	4	19.76	54	16	70.76	70	12	96.52
13	10	6.12	19	12	10.96	30	14	26.77	42	5	21.12	54	18	82.24	70	14	107.40
13	12	7.14	19	14	12.07	30	16	32.38	42	6	22.31	54	20	92.44	70	16	118.96
13	14	8.08	19	16	13.26	30	18	38.25	42	8	27.41	56	6	45.90	70	18	130.56
13	16	9.14	20	3	5.10	30	20	42.07	42	10	31.87	56	8	51.64	72	10	89.29
14	3	3.82	20	4	6.37	32	4	11.22	42	12	36.97	56	10	56.74	72	12	100.43
14	4	4.42	20	5	6.88	32	5	11.98	42	14	42.71	56	12	61.84	72	14	111.60
14	5	4.80	20	6	7.65	32	6	13.13	42	16	49.09	56	14	68.21	72	16	123.59

Add 25% to the Net Price of the next larger size pulley for the Net Price of odd sizes over 24-inch in diameter.

Pulley Diameter Inches	Regular Bore Inches	Special Bore Inches	Additional Price for Special or Large Bores	BUSHINGS		
				Outside Diameter Inches	Length Inches	Symbol
6 to 7 inclu	2 1/4			2 1/8	3 1/2	F
8 to 20 "	3 1/2			3 1/2	3 1/2	G
21 to 34 "	3 1/2	4 1/8, 6 1/8, 8 1/8	Quoted on Application	3 1/2	6 1/4	H
36 to 60 "	4 1/8	6 1/2-8 1/2		4 1/8	6 1/4	I
62 and larger	4 1/8, 6 1/2, 8 1/2			6 1/2	6 1/2	J
				8 1/2	7 1/4	K

Other Sizes up to 96 inches in diameter and 36-inch face furnished. Prices on application.

All pulleys are fitted with interchangeable Steel Bushings. Sleeves for tight and loose pulleys can be furnished at an additional price.

"Lawson" Wood Split Pulleys

A Standard of Quality and Workmanship Guaranteed to Give Satisfaction



A "Lawson" Wood Split Pulley

This pulley is not made for looks, but for strength and wearing quality. The rims of all pulleys over 11 inches in diameter are composed of segments, which are made from wide laggings of Wisconsin linden wood, which makes the best belt surface yet discovered. These segments are put together with glue (the glue and segment being heated and put together hot) and each one secured by eight coated nails. The segments are left hexagonal on interior rim of pulley, thereby retaining full strength of the wood. The hubs and arms are of hard maple, which extend into the rim and are securely fastened.

All pulleys 11 inches in diameter and under are made of the least number of pieces possible. Two boards are bolted together and bored for shaft, then a cap board is bolted over the heads and nuts of the grip bolts, and the whole is turned into a pulley. Thus a perfect unbreakable pulley without nails or glue is formed.

In forming the **wood bushing**, great skill is required to make them **perfect**, to prevent wobble of the pulley, and **aid it to grip** the shaft tight. We have adopted the **four-piece bush**, made by machines that form them **perfectly true**, and they will conform to shaft perfectly, making a **sure grip** and the pulley **run true**, and on center, and this in **all climates**. The bushings are made of the hardest kiln-dried woods. **Every pulley is balanced**. The bushings are inserted in the bore of the pulley for the consumer.

Net Prices—No Further Discount
When ordering, always give diameter, face, size of shaft and whether crown or straight face.

78M104

WIDTH OF FACE, INCHES.

Diam. Inches	3	4	5	6	8	10	12	14	16	18
4	\$1.68	\$1.74	\$1.86	\$1.98	\$2.22	\$2.46	\$2.70			
5	1.71	1.77	1.92	2.04	2.31	2.58	2.85			
6	1.74	1.80	1.95	2.10	2.40	2.70	3.00			
7	1.77	1.83	2.01	2.16	2.49	2.85	3.15	\$3.48		
8	1.80	1.86	2.04	2.22	2.58	2.94	3.30	3.66		
9	1.86	1.95	2.16	2.34	2.73	3.12	3.51	3.90		
10	1.95	2.04	2.25	2.46	2.88	3.30	3.72	4.14	\$4.56	
11	2.10	2.22	2.46	2.70	3.18	3.66	4.14	4.62	5.10	
12	2.25	2.40	2.67	2.94	3.48	4.02	4.56	5.10	5.64	\$6.18
13		2.58	2.88	3.18	3.78	4.38	4.98	5.58	6.18	6.78
14		2.76	3.09	3.42	4.08	4.74	5.40	6.05	6.72	7.38
15		2.94	3.30	3.66	4.38	5.10	5.82	6.54	7.26	7.98
16		3.12	3.51	3.96	4.68	5.46	6.24	7.02	7.80	8.58
17		3.30	3.72	4.14	4.98	5.82	6.66	7.50	8.34	9.18
18		3.48	3.93	4.38	5.28	6.18	7.08	7.98	8.88	9.78
19		3.66	4.14	4.62	5.58	6.54	7.50	8.46	9.42	10.38
20		3.84	4.35	4.86	5.88	6.90	7.92	8.94	9.96	10.98
22		4.20	4.77	5.34	6.48	7.62	8.76	9.90	11.04	12.18
24		4.62	5.28	5.94	7.26	8.58	9.90	11.22	12.54	13.86
26		5.04	5.79	6.54	8.04	9.54	11.04	12.54	14.04	15.54
28		5.46	6.30	7.14	8.82	10.50	12.18	13.86	15.54	17.22
30		5.88	6.81	7.74	9.60	11.46	13.32	15.18	17.04	18.90
32		6.30	7.32	8.34	10.38	12.42	14.46	16.50	18.54	20.58
34		6.78	7.89	9.00	11.22	13.44	15.66	17.88	20.10	22.32
36		7.26	8.46	9.66	12.06	14.46	16.86	19.26	21.66	24.06
38			10.32	12.90	15.48	18.06	20.64	23.22	25.80	
40			10.98	13.74	16.50	19.26	22.02	24.78	27.54	
42			11.76	14.76	17.76	20.76	23.76	26.76	29.76	
44			12.54	15.78	19.02	22.26	25.50	28.74	31.98	
46			13.38	16.86	20.34	23.82	27.30	30.78	34.26	
48			14.28	18.00	21.72	25.44	29.16	32.88	36.60	
50			15.24	19.20	23.16	27.12	31.08	35.04	39.00	
52			16.26	20.46	24.66	28.86	33.06	37.26	41.46	
54			17.34	21.78	26.22	30.66	35.10	39.54	43.98	
56			18.48	23.16	27.84	32.52	37.20	41.88	46.56	
58			19.68	24.60	29.52	34.44	39.36	44.28	49.20	
60			20.94	26.10	31.26	36.42	41.58	46.74	51.90	
62			22.26	27.66	33.06	38.46	43.86	49.26	54.66	
64			23.64	29.28	34.92	40.56	46.20	51.84	57.48	
66			25.14	31.08	37.02	42.96	48.90	54.84	60.78	
68			26.70	32.94	39.18	45.42	51.66	57.90	64.14	
70			28.32	34.86	41.40	47.94	54.48	61.02	67.56	
72			30.00	36.84	43.68	50.52	57.36	64.20	71.04	

WOOD BUSHINGS---ONE FURNISHED WITH EACH PULLEY

Extra Bushings

Ten inch and shorter, 50c net.
Over ten inch long, 5c per inch net.

Regular Size Holes in Lawson Pulleys

12 to 48 inch— $3\frac{1}{2}$ inch hole.

8 to 11 inch— 3 inch hole.

5 to 7 inch— $2\frac{1}{2}$ inch hole.

4 inch— 2 inch hole.

3 inch— $1\frac{1}{2}$ inch hole.

Extra Prices for Holes Larger Than Regular

5 inch hole—add \$1.00 net.

6 inch hole—add 2.00 net.

8 inch hole—add 2.50 net.

10 inch hole—add 3.00 net.

Non-Listed Pulleys

Odd sizes, take next larger size, both as to diameter and face.

Flange Pulleys

add 5% on price for each flange.

Step Cone Pulleys

Each step figured as a pulley, and add 50% to price.

Taper Cone Pulleys

Figure same price as pulley, size of large end, and add 25% to price.

Special Pulleys

Pulleys other than listed will be furnished direct from factory—Prices on application.

Prices listed f. o. b. Chicago.

HOW TO ORDER CAST IRON PULLEYS

In writing ORDERS, describe pulleys and give dimensions in the following order:

1. DIAMETER

Specify diameter in inches.
This should be the first dimension given.

2. FACE

Specify face in inches.
This should be the second dimension given, and should be specified as the width of belt to be used, unless an exact width of face is desired, in which case the fact should be noted on the order by having the word "exact" follow the dimension of face.

An extra charge is made for making face exact.

Pulleys are made with faces of sufficient width to carry belts of the nominal widths specified in the lists.

Pulleys ordered to have faces more than one-half inch wider than size listed will be charged at next wider list.

3. BORE

Specify exact diameter of shaft in inches.
This should be the third dimension given.

If shaft is of an odd or special diameter, make a gauge or give micrometer measurements.

For price on pulleys with bores larger than the standard specified in the list.

DIAMETER	
6 to 15 inches..	Add 10% for each additional $\frac{1}{4}$ inch or fractional part thereof.
16 to 30 inches..	Add 10% for each additional $\frac{1}{2}$ inch or fractional part thereof.
31 to 60 inches..	Add 5% for each additional $\frac{1}{2}$ inch or fractional part thereof.

4. CROWN OR STRAIGHT FACE

If neither is specified, crown face pulleys will be furnished.

Pulleys for belts which do not shift should have crown face.

Pulleys for shifting belts should have straight face.

Each pulley of a pair of tight and loose pulleys should have crown face.

5. KEYSEAT OR SET SCREWS

State whether keyseated or set screwed or both.

If neither is specified, set screws only will be furnished.

If keyseated, state whether straight or taper. Pulley keyseated and not set screwed should have taper keyseat.

Taper keyseats will be cut with $\frac{1}{4}$ inch taper per foot unless otherwise specified.

If size of keyseat is not specified, our standard will be used—see shafting, Page 122.

There is an additional charge when setscrews are ordered with keyseats or for both.

Up to 15-inch diameter, inc., add....Net	\$0.40
16 to 24-inch diameter, inc., add....Net	.48
25 to 35-inch diameter, inc., add....Net	.56
36 to 48-inch diameter, inc., add....Net	.80
50 to 60-inch diameter, inc., add....Net	.92
62 to 72-inch diameter, inc., add....Net	1.04

6. DESCRIPTION

State whether solid, split, tight and loose or flange pulleys are desired.

If no description is given, plain solid pulleys will be furnished.

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NET PRICE

Special Pulleys—Less than 6-Inch Diameter

Diam., Inches	Face, Inches	Net Price, Each	Largest Bore	Diam., Inches	Face Inches	Net Price, Each	Largest Bore
2	2	\$2.00	1	4	4	\$3.32	1 $\frac{1}{2}$
	2.28	2.28	1		6	3.50	2
	2.56	2.56	1		8	3.68	2 $\frac{1}{2}$
	2.20	2.20	1		2	2.64	1
3	3	2.48	1 $\frac{1}{4}$	5	3	2.92	1 $\frac{1}{4}$
	2.80	2.80	1 $\frac{1}{2}$		4	3.20	1 $\frac{1}{2}$
	3.12	3.12	1 $\frac{1}{2}$		5	3.52	1 $\frac{3}{4}$
	3.52	3.52	1 $\frac{1}{2}$		6	3.92	2
4	2	2.40	1	7	7	4.32	2 $\frac{1}{4}$
	2.68	2.68	1 $\frac{1}{4}$		8	4.80	2 $\frac{1}{2}$

For half sizes take next largest list.

TIGHT AND LOOSE PULLEYS

Additional price to be added to the net price per pair for tight and loose pulleys.

Diameter Inches	Face Inches				
	3 & 4	5 & 6	7 & 8	9 & 10	11 & 12
6 to 9	\$1.04	\$1.60	\$2.40	\$3.60	...
10 to 15	1.20	1.84	2.72	4.00	\$5.60
16 to 20	1.68	2.32	3.20	4.40	6.00
21 to 30	2.64	3.28	4.16	5.44	7.28
31 to 42	3.60	4.40	5.52	7.20	9.68
43 to 60	4.80	5.92	7.44	9.60	12.64

SINGLE OR DOUBLE FLANGE PULLEYS

Prices on application.

7. SERVICE

State whether single or double belt strength is wanted.

If neither is specified, single belt pulleys will be furnished as far as listed.

If greater horsepower than double leather belt is required, the amount of horse-power, revolutions per minute and character of service should be specified.

EXTRAS

Balanced for high speed—20% additional regular pulleys up to and including 36-inch diameter are balanced to perform regular work at a speed not in excess of 300 r.p.m. and pulleys 37-inch diameter and over at a rim speed not in excess of 3000 feet per minute.

Dynamo or motor pulleys—25% additional. Pulleys having diameters specified in fractions of an inch, viz.: $\frac{1}{2}$, $\frac{1}{4}$, etc., 50% additional to the nearest double belt list.

Pulleys above 48-inch diameter, not listed but in full inches like 55-inch, 69-inch, etc., take price of the next larger size.

Exact diameters, either at crown or at edge of rim—50% additional.

Offset hubs, offset arms, hubs longer than standard—one-half tight and loose, price—additional.

CAST IRON PULLEYS



Machine—Moulded—Balanced—True

For Single or Double Belts

Our pulleys are machine-moulded, bored, and turned in a lathe, carefully balanced, painted and provided with Set Screws or Key-Seats as may be desired.

Boxing or crating pulleys for shipment are charged for extra.

All orders for Pulleys will be shipped without boxing or crating unless otherwise specified.

When orders are received and no description given, crowning face, Single Belt Solid Pulleys will be furnished.

78M100

SOLID

Sizes, Net Prices, etc.

SPLIT

SOLID		SPLIT		SOLID		SPLIT		SOLID		SPLIT	
Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"	Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"	Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"	Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"	Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"	Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"	Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"	Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"	Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"	Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"	Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"	Largest Bore at $2\frac{1}{2}$ " Reg. Price, 14"
Diameter, Face, Inches.											
6	3	1.76	2.00	2.96	3.20	2.64	2.96	4.00	4.32	3.48	3.84
7	4	2.00	2.24	3.20	3.44	3.00	4.36	4.76	5.04	4.44	5.40
8	5	2.28	2.52	3.68	3.92	3.36	5.00	5.48	5.82	5.44	6.00
9	6	2.56	2.88	3.96	4.28	3.76	5.40	6.12	6.52	5.08	7.00
10	7	2.88	3.28	4.48	4.88	4.20	6.12	6.70	7.48	5.72	7.64
11	8	3.24	3.64	4.84	5.24	4.68	6.60	7.24	8.08	6.44	9.36
12	9	3.64	4.04	5.88	6.28	5.84	7.24	7.80	8.52	7.76	10.48
10	10	4.44	4.84	6.92	7.32	6.40	8.64	9.56	10.20	9.28	11.20
11	11	4.84	5.24	7.60	8.00	7.00	8.72	9.56	11.24	10.04	12.36
12	12	5.24	5.64	7.60	8.32	7.64	10.20	11.24	12.40	10.80	13.12
13	13	5.64	6.04	7.60	8.00	6.88	8.72	9.56	11.60	10.40	15.12
14	14	6.04	6.44	7.60	8.00	7.48	10.28	11.24	12.40	11.00	16.36
15	15	6.44	6.84	7.60	8.00	7.12	10.92	11.24	12.40	11.76	12.96
16	16	6.84	7.24	7.60	8.00	6.96	12.60	13.68	14.04	13.76	15.04
17	17	7.24	7.64	7.60	8.00	7.36	11.96	12.60	13.68	12.00	15.84
18	18	7.64	8.04	7.60	8.00	7.36	13.28	14.40	15.52	13.70	17.16
19	19	8.04	8.44	7.60	8.00	7.36	14.40	15.52	16.40	14.56	19.40
20	20	8.44	8.84	7.60	8.00	7.36	15.52	16.40	17.56	15.72	20.36
21	21	8.84	9.24	7.60	8.00	7.36	16.40	17.56	18.64	16.72	21.36
22	22	9.24	9.64	7.60	8.00	7.36	17.56	18.64	19.72	17.80	22.36
23	23	9.64	10.04	7.60	8.00	7.36	18.64	19.72	20.80	18.76	23.36
24	24	10.04	10.44	7.60	8.00	7.36	19.72	20.80	21.88	19.80	24.36
25	25	10.44	10.84	7.60	8.00	7.36	20.80	21.88	22.96	20.92	25.36
26	26	10.84	11.24	7.60	8.00	7.36	21.88	22.96	24.04	22.12	26.36
27	27	11.24	11.64	7.60	8.00	7.36	22.96	24.04	25.12	23.20	27.36
28	28	11.64	12.04	7.60	8.00	7.36	24.04	25.12	26.20	24.28	28.36
29	29	12.04	12.44	7.60	8.00	7.36	25.12	26.20	27.28	25.36	29.36
30	30	12.44	12.84	7.60	8.00	7.36	26.20	27.28	28.36	26.44	30.36
31	31	12.84	13.24	7.60	8.00	7.36	27.28	28.36	29.44	27.52	31.36
32	32	13.24	13.64	7.60	8.00	7.36	28.36	29.44	30.52	28.60	32.36
33	33	13.64	14.04	7.60	8.00	7.36	29.44	30.52	31.60	29.68	33.36
34	34	14.04	14.44	7.60	8.00	7.36	30.52	31.60	32.68	30.76	34.36
35	35	14.44	14.84	7.60	8.00	7.36	31.60	32.68	33.76	31.84	35.36
36	36	14.84	15.24	7.60	8.00	7.36	32.68	33.76	34.84	32.92	36.36
37	37	15.24	15.64	7.60	8.00	7.36	33.76	34.84	35.92	33.12	37.36
38	38	15.64	16.04	7.60	8.00	7.36	34.84	35.92	36.12	34.20	38.36
39	39	16.04	16.44	7.60	8.00	7.36	35.92	36.12	37.20	35.28	39.36
40	40	16.44	16.84	7.60	8.00	7.36	36.12	37.20	38.28	36.36	40.36
41	41	16.84	17.24	7.60	8.00	7.36	37.20	38.28	39.36	37.44	41.36
42	42	17.24	17.64	7.60	8.00	7.36	38.28	39.36	40.44	38.52	42.36
43	43	17.64	18.04	7.60	8.00	7.36	39.36	40.44	41.52	39.60	43.36
44	44	18.04	18.44	7.60	8.00	7.36	40.44	41.52	42.60	40.68	44.36
45	45	18.44	18.84	7.60	8.00	7.36	41.52	42.60	43.68	41.76	45.36
46	46	18.84	19.24	7.60	8.00	7.36	42.60	43.68	44.76	42.84	46.36
47	47	19.24	19.64	7.60	8.00	7.36	43.68	44.76	45.84	43.92	47.36
48	48	19.64	20.04	7.60	8.00	7.36	44.76	45.84	46.92	44.12	48.36
49	49	20.04	20.44	7.60	8.00	7.36	45.84	46.92	47.12	45.20	49.36
50	50	20.44	20.84	7.60	8.00	7.36	46.92	47.12	48.20	46.28	50.36
51	51	20.84	21.24	7.60	8.00	7.36	47.12	48.20	49.28	47.36	51.36
52	52	21.24	21.64	7.60	8.00	7.36	48.20	49.28	50.36	48.44	52.36
53	53	21.64	22.04	7.60	8.00	7.36	49.28	50.36	51.44	49.52	53.36
54	54	22.04	22.44	7.60	8.00	7.36	50.36	51.44	52.52	50.60	54.36
55	55	22.44	22.84	7.60	8.00	7.36	51.44	52.52	53.60	51.68	55.36
56	56	22.84	23.24	7.60	8.00	7.36	52.52	53.60	54.68	52.76	56.36
57	57	23.24	23.64	7.60	8.00	7.36	53.60	54.68	55.76	53.84	57.36
58	58	23.64	24.04	7.60	8.00	7.36	54.68	55.76	56.84	54.92	58.36
59	59	24.04	24.44	7.60	8.00	7.36	55.76	56.84	57.92	55.12	59.36
60	60	24.44	24.84	7.60	8.00	7.36	56.84	57.92	58.12	56.20	60.36
61	61	24.84	25.24	7.60	8.00	7.36	57.92	58.12	59.20	57.28	61.36
62	62	25.24	25.64	7.60	8.00	7.36	58.12	59.20	60.28	58.36	62.36
63	63	25.64	26.04	7.60	8.00	7.36	59.20	60.28	61.36	59.44	63.36
64	64	26.04	26.44	7.60	8.00	7.36	60.28	61.36	62.44	60.52	64.36
65	65	26.44	26.84	7.60	8.00	7.36	61.36	62.44	63.52	61.60	65.36
66	66	26.84	27.24	7.60	8.00	7.36	62.44	63.52	64.60	62.68	66.36
67	67	27.24	27.64	7.60	8.00	7.36	63.52	64.60	65.68	63.76	67.36
68	68	27.64	28.04	7.60	8.00	7.36	64.60	65.68	66.76	64.84	68.36
69	69	28.04	28.44	7.60	8.00	7.36	65.68	66.76	67.84	65.92	69.36
70	70	28.44	28.84	7.60	8.00	7.36	66.76	67.84	68.92	66.12	70.36
71	71	28.84	29.24	7.60	8.00	7.36	67.84	68.92	69.12	67.20	71.36
72	72	29.24	29.64	7.60	8.00	7.36	68.92	69.12	70.20	68.36	72.36
73	73	29.64	30.04	7.60	8.00	7.36	69.12	70.20	71.28	69.44	73.36
74	74	30.04	30.44	7.60	8.00	7.36	70.20	71.28	72.36	70.52	74.36
75	75	30.44	30.84	7.60	8.00	7.36	71.28	72.36	73.44	71.60	75.36
76	76	30.84	31.24	7.60	8.00	7.36	72.36	73.44	74.52	72.68	76.36
77	77	31.24	31.64	7.60	8.00	7.36	73.44	74.52	75.60	73.76	77.36
78	78	31.64	32.04	7.60	8.00	7.36	74.52	75.60	76.76	74.84	78.36
79	79	32.04	32.44	7.60	8.00	7.36	75.60	76.76	77.84	75.92	79.36
80	80	32.44	32.84	7.60	8.00	7.36	76.76	77.84	78.92	76.12	80.36
81	81	32.84	33.24	7.60	8.00	7.36	77.84	78.92	79.12	77.20	81.36
82	82	33.24	33.64	7.60	8.00	7.36	78.92	79.12	80.20	78.36	82.36
83	83	33.64	34.04	7.60	8.00	7.36	79.12	80.20	81.28	79.44	83.36
84	84	34.04	34.44	7.60	8.00	7.36	80.20	81.28	82.36	80.52	84.36
85	85	34.44	34.84	7.60	8.00	7.36	81.28	82.36	83.44	81.60	85.36
86	86	34.84	35.24	7.60	8.00	7.36	82.36	83.44	84.52	82.68	86.36
87	87	35.24	35.64	7.60	8.00	7.36	83.44	84.52	85.60	83.76	87.36
88	88	35.64	36.04	7.60	8.00	7.36	84.52	85.60	86.76	84.92	88.36
89	89	36.04	36.44	7.60	8.00	7.36	85.60	86.76	87.84	85.12	89.36
90	90	36.44	36.84	7.60	8.00	7.36	86.76	87.84	88.92	86.36	90.36
91	91	36.84	37.24	7.60	8.00	7.36	87.84	88.92	89.12	87.52	91.36
92	92	37.24	37.64	7.60	8.00	7.36	88.92	89.12	90.20	88.76	92.36
93	93	37.64	38.04	7.60	8.00	7.36	89.12	90.20	91.28	89.44	93.36
94	94	38.04	38.44	7.60	8.00	7.36	90.20	91.28	92.36	90.60	94.36
95	95	38.44	38.84	7.60	8.00	7.36	91.28	92.36	93.44	91.76	95.36
96	96	38.84	39.24	7.60	8.00	7.36	92.36	93.44	94.52	92.92	96.36
97	97	39.24	39.64	7.60	8.00	7.36	93.44				

Cast Iron Pulleys

CONTINUED

78M100

NET PRICES---SIZES, ETC

Cast Iron Pulleys

CONTINUED

78M100

NET PRICES—SIZES, ETC.

		SOLID		SPLIT		SOLID		SPLIT		SOLID		SPLIT		
Largest Bore at Reg. Price, 3 $\frac{1}{4}$ "	Diameter, Inches.	Face, Inches.	Single Belt.	Double Belt.	Single Belt.	Face, Inches.	Single Belt.	Double Belt.	Single Belt.	Face, Inches.	Single Belt.	Double Belt.	Single Belt.	Double Belt.
30	23.88	13	\$30.32	34	9.08	10.48	12.36	13.76	13.76	12.36	13.76	31.72	39.48	
14	25.52	14	31.96	34	10.36	12.16	13.64	15.44	15.44	13.64	15.44	33.80	41.56	
15	27.16	15	34.36	34	11.76	13.84	15.88	17.96	17.96	15.88	17.96	35.92	44.56	
16	28.80	16	36.00	34	13.20	15.56	17.32	19.68	19.68	17.32	19.68	38.04	46.68	
17	30.48	17	38.48	34	14.72	17.28	19.60	22.16	22.16	19.60	22.16	40.20	49.76	
18	32.20	18	40.20	34	16.24	19.04	21.12	23.92	23.92	19.04	23.92	42.36	51.88	
19	33.92	19	42.72	34	17.76	20.84	23.44	26.52	26.52	20.84	26.52	44.56	55.04	
20	35.68	20	44.48	34	19.32	22.64	25.00	28.32	28.32	22.64	28.32	46.76	57.24	
21	37.44	21	47.08	34	20.88	24.48	27.36	30.96	30.96	24.48	30.96	49.00	60.44	
22	39.24	22	48.88	34	22.40	26.32	29.32	32.80	32.80	26.32	32.80	51.28	62.72	
23	41.04	23	51.52	34	23.92	30.08	35.52	37.40	37.40	30.08	35.52	53.56	65.96	
31	7.88	3	10.68	11.92	11.92	12.36	13.76	13.76	13.76	12.36	13.76	31.72	39.48	
4	9.12	4	10.60	11.92	13.40	14.92	16.40	17.96	17.96	14.92	17.96	33.80	41.56	
5	10.36	5	12.12	13.92	15.68	17.20	19.92	21.12	21.12	17.20	19.92	35.92	44.56	
6	11.64	6	13.64	15.20	17.20	19.44	21.12	23.92	23.92	19.44	21.12	38.04	46.68	
7	12.92	7	15.20	17.16	19.44	21.00	23.32	25.92	25.92	21.00	23.32	40.20	49.76	
8	14.24	8	16.76	18.48	21.00	23.32	25.92	28.48	28.48	23.32	25.92	42.36	51.88	
9	15.60	9	18.36	20.56	23.32	25.92	28.48	31.12	31.12	25.92	28.48	44.56	55.04	
10	17.00	10	19.96	21.96	24.92	27.28	30.08	32.80	32.80	27.28	30.08	46.76	57.24	
11	18.40	11	21.60	24.08	27.28	30.12	32.00	34.80	34.80	27.28	30.12	49.00	60.44	
12	23.24	12	28.92	31.36	33.92	36.44	38.64	41.08	41.08	36.44	38.64	51.28	60.44	
13	24.92	13	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	37.24	53.56	62.72	
14	26.60	14	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	37.24	55.92	64.68	
15	28.32	15	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	37.24	58.04	66.88	
16	30.04	16	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	37.24	60.20	69.04	
17	31.80	17	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	37.24	62.36	71.12	
18	33.56	18	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	37.24	64.56	73.32	
19	35.36	19	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	37.24	66.76	75.52	
20	37.16	20	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	37.24	68.92	77.68	
21	39.00	21	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	37.24	71.12	80.00	
22	40.88	22	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	37.24	73.32	81.12	
23	42.76	23	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	37.24	75.52	83.32	
32	8.24	3	9.56	11.28	12.60	13.44	14.92	16.76	16.76	13.44	16.76	16.76	18.80	
4	9.52	4	11.68	12.56	14.16	15.52	17.20	19.52	19.52	15.52	19.52	19.40	21.76	
5	10.84	5	12.68	14.68	16.52	18.12	19.92	21.52	21.52	18.12	21.52	21.52	23.80	
6	12.16	6	14.28	16.00	18.12	19.92	21.52	23.32	23.32	18.12	21.52	23.72	26.68	
7	13.52	7	15.88	18.08	20.44	22.08	24.00	25.36	25.36	20.44	24.00	25.48	28.76	
8	14.88	8	17.52	19.44	22.08	24.48	27.28	29.32	29.32	22.08	27.28	29.92	33.84	
9	16.28	9	19.16	21.60	24.48	27.28	30.08	32.00	32.00	24.48	30.08	32.60	36.76	
10	17.72	10	20.84	23.04	26.16	29.32	32.00	35.00	35.00	26.16	32.00	35.44	39.00	
11	19.20	11	22.52	25.28	28.60	30.32	33.92	36.64	36.64	28.60	33.92	38.84	42.08	
12	24.24	12	26.00	28.88	31.36	33.92	36.64	38.64	38.64	31.36	36.64	38.84	44.28	
13	27.76	13	29.56	31.36	34.64	37.24	41.44	43.44	43.44	34.64	41.44	43.44	47.40	
14	31.36	14	31.36	33.04	35.52	37.24	39.84	42.08	42.08	35.52	42.08	42.72	47.40	
15	33.20	15	41.72	43.56	46.28	50.96	55.68	59.52	59.52	41.72	50.96	55.68	58.36	
16	35.04	16	41.72	43.56	46.28	50.96	55.68	59.52	59.52	41.72	50.96	55.68	60.68	
17	36.92	17	41.72	43.56	46.28	50.96	55.68	59.52	59.52	41.72	50.96	55.68	64.00	
18	38.88	18	41.72	43.56	46.28	50.96	55.68	59.52	59.52	41.72	50.96	55.68	66.36	
19	40.72	19	41.72	43.56	46.28	50.96	55.68	59.52	59.52	41.72	50.96	55.68	69.72	
20	42.64	20	41.72	43.56	46.28	50.96	55.68	59.52	59.52	41.72	50.96	55.68	72.12	
21	44.56	21	44.56	55.68	55.68	55.68	55.68	55.68	55.68	55.68	55.68	59.04	64.00	
33	8.64	3	10.20	17.68	13.04	13.44	14.92	16.76	16.76	13.44	16.76	16.76	19.68	
4	9.92	4	11.60	12.96	14.64	15.52	17.20	19.52	19.52	15.52	19.52	19.52	22.76	
5	11.28	5	13.24	15.12	17.08	18.72	20.40	22.08	22.08	18.72	20.40	22.08	24.88	
6	12.68	6	14.88	16.52	18.72	20.40	22.08	23.80	23.80	18.72	20.40	23.80	26.88	
7	14.12	7	16.56	18.60	21.04	21.04	24.08	24.08	24.08	18.60	21.04	24.08	27.88	
8	15.56	8	18.24	20.84	23.56	23.56	24.08	24.08	24.08	18.24	23.56	24.08	30.00	
9	17.04	9	19.96	22.36	25.28	25.28	25.28	25.28	25.28	19.96	22.36	25.28	33.08	
10	18.52	10	21.68	23.84	27.00	27.00	27.00	27.00	27.00	21.68	23.84	27.00	35.24	
11	20.04	11	23.44	26.12	29.52	29.52	29.52	29.52	29.52	23.44	26.12	29.52	38.32	
12	25.24	12	25.24	31.36	33.92	33.92	33.92	33.92	33.92	25.24	31.36	33.92	40.52	
13	27.04	13	27.04	33.92	35.76	35.76	35.76	35.76	35.76	27.04	33.92	35.76	43.68	
14	28.88	14	28.88	35.76	38.40	38.40	38.40	38.40	38.40	28.88	35.76	38.40	45.88	
15	30.72	15	30.72	40.28	43.00	43.00	43.00	43.00	43.00	30.72	40.28	43.00	49.08	
16	32.60	16	32.60	40.28	43.00	43.00	43.00	43.00	43.00	32.60	40.28	43.00	51.32	
17	34.48	17	34.48	43.00	46.40	46.40	46.40	46.40	46.40	34.48	43.00	46.40	54.60	
18	36.40	18	36.40	44.92	49.16	49.16	49.16	49.16	49.16	36.40	44.92	49.16	56.88	
19	38.32	19	38.32	47.68	51.16	51.16	51.16	51.16	51.16	38.32	47.68	51.16	60.16	
20	40.28	20	40.28	49.64	52.48	52.48	52.48	52.48	52.48	40.28	49.64	52.48	62.48	
21	42.24	21	42.24	52.48	54.48	54.48	54.48	54.48	54.48	42.24	52.48	54.48	65.84	
22	44.24	22	44.24	54.48	57.36	57.36	57.36	57.36	57.36	44.24	54.48	57.36	68.20	
23	46.24	23	46.24	57.36	59.40	59.40	59.40	59.40	59.40	46.24	57.36	59.40	71.60	
24	48.28	24	48.28	59.40	25.32	29.64	32.20	36.52	36.52	25.32	29.64	32.20	74.04	

Cast Iron Pulleys

CONTINUED

78M100

NET PRICES—SIZES, ETC.

		SOLID		SPLIT		SOLID		SPLIT		SOLID		SPLIT						
		Diameter, Inches.	Face, Inches.	Diameter, Inches.	Face, Inches.	Diameter, Inches.	Face, Inches.	Diameter, Inches.	Face, Inches.	Diameter, Inches.	Face, Inches.	Diameter, Inches.	Face, Inches.					
41		Largest Bore at Reg. Price, 3 $\frac{1}{2}$				\$13.84	\$16.20	\$17.92	\$20.28	44	17	\$49.92	\$61.76	48	\$31.00	\$37.00	\$39.56	\$46.36
5	4	15.64	18.40	20.68	23.44	15.64	18.40	22.52	25.56	18	18	52.44	64.28	10	33.28	39.72	42.92	49.36
6	7	17.48	20.52	22.58	25.28	19.35	22.72	25.28	28.64	19	19	54.96	67.88	11	35.12	42.48	44.76	52.12
8	9	21.24	24.92	27.16	30.84	23.12	27.12	29.96	33.96	20	21	57.44	70.36	12	45.24	55.76		
10	11	25.00	29.32	31.84	36.16	23.12	27.12	29.96	33.96	22	23	60.04	74.08	13	48.00	58.52		
12	13	26.88	31.56	34.64	39.32	23.12	27.12	29.96	33.96	24	25	62.60	76.64	14	50.80	62.68		
14	15	28.80	33.80	36.56	41.56	36.04	38.28	40.80	44.76	24	26	65.16	80.32	15	53.60	65.48		
16	17					38.28	47.00	51.00	55.4	45	27	67.80	82.96	16	56.44	69.48		
18	19					40.56	50.24	55.00	60.4	46	28	72.08	86.76	17	59.28	72.32		
20	21					42.84	52.52	57.24	62.8	47	29	76.12	90.40	18	62.16	76.36		
22	23					45.12	55.80	60.52	66.0	48	30	80.76	95.08	19	65.04	79.24		
24						47.40	58.08	63.72	68.8	49	31	85.28	99.40	20	67.96	83.36		
						49.72	63.00	67.08	71.8	50	32	90.40	104.72	21	70.88	86.28		
						52.04	66.32	70.86	75.2	51	33	95.28	109.56	22	73.80	89.40		
						54.36	69.44	72.84	77.2	52	34	100.16	114.44	23	76.76	93.36		
						59.08	61.44	61.44	75.20	53	35	104.72	119.00	24				
42		Largest Bore at Reg. Price, 3 $\frac{1}{2}$				14.32	16.84	18.68	21.20	46	15	18.80	23.48	50	25.11	31.50		
5	6	16.16	19.08	21.52	24.44	18.08	21.32	23.44	26.68	47	16	21.24	26.96	51	28.26	35.96		
7	8	20.00	23.56	26.28	29.84	21.92	25.80	28.20	32.08	48	17	23.72	29.40	52	31.41	39.11		
9	10	23.84	28.08	31.08	35.32	25.76	29.36	33.00	37.60	49	18	26.24	31.92	53	34.56	43.47		
11	12	27.72	32.64	35.92	40.86	29.68	34.96	37.88	43.16	50	19	28.32	34.56	54	37.76	46.67		
13	14					37.28	39.60	41.20	44.24	51	20	30.36	36.08	55	40.95	51.12		
15	16					41.96	45.16	48.56	51.64	52	21	32.36	38.60	56	44.19	54.36		
17	18					44.32	46.68	49.08	51.48	53	22	34.16	40.48	57	47.43	58.86		
19	20					46.68	50.32	53.88	56.24	54	23	35.28	41.12	58	50.72	62.15		
22	23					53.88	56.24	58.68	61.04	55	24	37.00	43.16	59	54.00	66.47		
24						56.24	61.04	63.52	67.96	56				60	57.33	69.80		
43		Largest Bore at Reg. Price, 4 $\frac{1}{2}$				14.88	17.48	19.24	21.84	46	15	18.68	21.64	52	26.82	33.62		
5	6	16.80	19.80	22.16	25.16	18.72	22.12	24.08	27.48	47	16	22.00	24.48	53	30.15	39.46		
7	8	20.68	24.44	26.96	30.72	22.64	26.76	28.92	33.04	48	17	24.52	26.84	54	33.53	41.67		
9	10	24.60	29.12	31.84	36.36	24.60	29.12	31.84	36.36	49	18	27.84	30.60	55	40.28	49.68		
11	12	26.56	31.48	33.80	38.72	28.56	31.48	33.80	38.72	50	19	30.60	33.20	56	43.70	54.41		
13	14					30.56	36.20	38.76	44.40	51	20	31.32	37.36	57	47.12	57.83		
15	16					36.80	41.00	41.96	45.76	52	21	33.28	39.96	58	50.58	62.60		
17	18					41.00	45.30	49.36	53.60	53	22	34.20	42.56	59	54.05	66.06		
19	20					43.40	48.24	50.60	54.98	54	23	36.00	42.52	60	57.56	67.65		
22	23					45.80	50.68	53.12	56.50	55	24	37.24	43.96	61	61.07	74.16		
24						48.24	53.12	56.40	60.40	56				62	64.62	79.34		
44		Largest Bore at Reg. Price, 4 $\frac{1}{2}$				14.88	17.48	19.24	21.84	47	15	17.28	20.16	54	28.58	35.78		
5	6	16.80	19.80	22.16	25.16	18.72	22.12	24.08	27.48	48	16	20.16	22.28	55	32.67	40.68		
7	8	20.68	24.44	26.96	30.72	22.64	26.76	28.92	33.04	49	17	22.76	25.44	56	36.31	45.26		
9	10	24.60	29.12	31.84	36.36	24.60	29.12	31.84	36.36	50	18	25.36	27.56	57	40.00	49.55		
11	12	26.56	31.48	33.80	38.72	28.56	31.48	33.80	38.72	51	19	27.96	30.68	58	43.69	54.08		
13	14					30.56	36.20	38.76	44.40	52	20	30.08	36.04	59	49.38	57.77		
15	16					36.80	41.00	41.96	45.76	53	21	32.28	38.48	60	52.58	62.80		
17	18					41.00	45.30	49.36	53.60	54	22	34.20	41.16	61	56.52	66.84		
19	20					43.40	48.24	50.60	54.98	55	23	36.00	42.52	62	60.56	70.65		
22	23					45.80	50.68	53.12	56.50	56	24	37.24	43.96	63	64.62	74.16		
24						48.24	53.12	56.40	60.40	57				66	68.18	82.89		
45		Largest Bore at Reg. Price, 4 $\frac{1}{2}$				15.44	18.12	20.12	22.80	48	15	17.28	20.88	54	28.58	35.78		
5	6	17.40	20.52	23.12	26.24	19.36	22.92	25.08	28.64	49	16	20.88	23.24	55	32.67	40.68		
7	8	21.36	25.32	28.04	32.00	21.36	25.32	28.04	32.00	50	17	23.24	26.20	56	36.31	44.24		
9	10	25.44	30.16	33.12	37.84	25.44	27.72	30.08	34.40	51	18	26.20	29.36	57	40.20	49.10		
11	12	27.44	32.60	35.12	40.24	25.44	27.72	30.08	34.40	52	19	29.36	32.42	58	42.80	52.70		
13	14					30.44	35.04	38.12	43.72	53	20	31.56	34.04	59	46.40	57.65		
15	16					34.74	40.12	46.16	49.44	54	21	34.16	37.32	60	50.04	61.29		
17	18					37.48	40.12	46.16	49.44	55	22	34.28	37.32	61	53.69	66.29		
19	20					39.96	42.44	49.44	48	56	23	34.28	37.32	62	57.38	69.98		
22	23					42.44	44.92	51.92	55.68	57	24	34.28	37.32	63	61.07	74.79		
24						44.92	47.40	55.68	58.16	58				64	64.80	78.53		
46		Largest Bore at Reg. Price, 4 $\frac{1}{2}$				15.44	18.12	20.12	22.80	48	15	17.28	20.88	54	28.58	35.78		
5	6	17.40	20.52	23.12	26.24	19.36	22.92	25.08	28.64	49	16	20.88	23.24	55	32.67	40.68		
7	8	21.36	25.32	28.04	32.00	21.36	25.32	28.04	32.00	50	17	23.24	26.20	56	36.31	44.24		
9	10	25.44	30.16	33.12	37.84	25.44	27.72	30.08	34.40	51	18	26.20	29.36	57	40.20	49.10		
11	12	27.44	32.60	35.12	40.24	25.44	27.72	30.08	34.40	52	19	29.36	32.42	58	42.80	52.70		
13	14					30.44	35.04	38.12	43.72	53	20	31.56	34.04	59	46.40	57.65		
15	16					34.74	40.12	46.16	49.44	54	21	34.16	37.32	60	50.04	61.29		
17	18					37.48	40.12	46.16	49.44	55	22	34.28	37.32	61	53.69	66.29		
19	20					39.96	42.44	49.44	48	56	23	34.28	37.32	62	57.38	69.98		
22	23					42.44	44.92	51.92	55.68	57	24	34.28	37.32	63	61.07	74.79		
24						44.92	47.40	55.68	58.16	58				64	64.80	78.53		

GUMP'S BELT CONVEYORS

For carrying large quantities of grain a considerable distance.

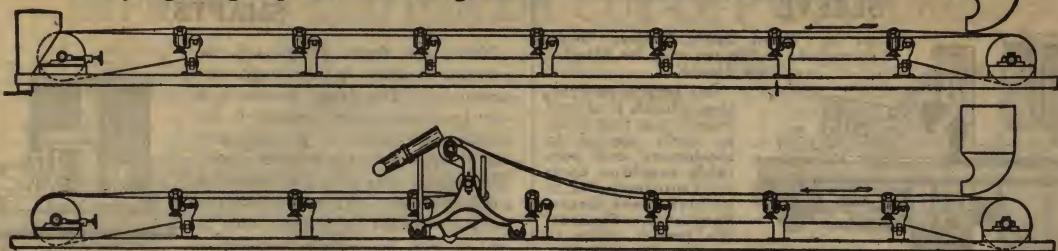


TABLE OF SPECIFICATIONS.

Belt Width Inches	Diam. Head Pulley, Ins.		Rev. Head Pulley Per Minute		Belt Travel Per Min.	Capacity Bushel Per Hour	Average Spacing Carriers	H. P. for 100 Ft. Length	Extra H. P. for Tripper
	Maximum	Minimum	Maximum	Minimum					
12	18	16	72	64	300	586	66 ins.	0.41	0.5
14	18	16	72	64	300	1032	66 ins.	0.71	0.5
16	24	20	72	48	300	1500	60 ins.	1.00	0.75
18	24	20	66	56	350	2280	56 ins.	1.42	1.00
20	24	20	66	66	350	2800	56 ins.	1.75	1.25
22	30	20	76	51	400	3840	56 ins.	2.28	1.50
24	30	24	76	51	400	4380	56 ins.	2.60	1.75
26	30	24	74	57	450	5760	48 ins.	3.28	2.00
28	30	24	74	57	450	6550	48 ins.	3.45	2.25
30	36	30	57	41	450	7470	48 ins.	3.75	2.50
32	36	30	65	52	500	9360	42 ins.	4.60	2.75
36	42	36	65	42	500	11500	42 ins.	5.42	3.25

Pulley face to be two inches wider than belt. Tail pulley may be same diameter or less diameter than head pulley. Capacities given are based on belt speed given in sixth column. For long conveyors, use maximum size of head pulley, and minimum size for short conveyor. Belt travel in table is considered standard, although narrow belts work satisfactory as high as 500 ft. per minute and wide belts at 1000 ft. Return idlers spaced twice the distance of carrier idlers. Use a tripper when grain must be discharged somewhere between the head and tail pulleys.

CONVEYOR BELT PULLEYS



78A106

SIZES AND NET PRICES

Dia. in. Ins.	WIDTH OF FACE IN INCHES								
	14	16	18	20	22	24	30	36	40
10	\$16.80	\$17.60	\$18.00	\$19.80	\$21.84	\$24.00	\$42.60	\$61.80	\$74.40
12	9.40	18.40	19.80	21.60	23.76	25.92	44.64	63.96	76.56
14	10.80	19.60	21.12	23.52	25.80	27.96	47.48	66.24	78.72
16	.....	13.76	22.56	25.44	27.72	30.00	48.84	68.40	80.88
18	.....	27.36	29.76	32.28	51.00	70.56	83.04	.....	.....
20	.....	.....	.....	.....	53.40	72.72	85.20	.....	.....
26	.....	.....	.....	.....	.....	80.40	93.60	.....	.....
30	.....	.....	.....	.....	.....	87.60	99.60	.....	.....
36	.....	.....	.....	.....	.....	115.20	.....	.....	.....

For smaller size of face pulleys, see index on Cast Iron Pulleys.

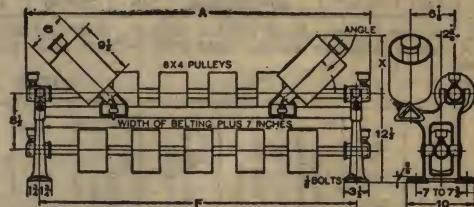
Rubber Covered Pulleys Furnished—Prices on Application.

RUBBER CONVEYOR BELT—NET PRICE, PER FT.

Thickness	WIDTH, INCHES									
	16	18	20	22	24	26	28	30	32	36
4-Ply	\$1.39	\$1.56	\$1.73	\$1.90	\$2.07	.....	.....	.....	.....	.....
5-Ply	1.74	1.94	2.16	2.38	2.59	2.82	3.02	3.24	3.47	3.89
6-Ply	2.08	2.34	2.59	2.85	3.11	3.38	3.64	3.89	4.16	4.68

To secure a net lump price on any size belt conveyor, write us, stating the amount of grain you wish to handle per hour, length of belt, and whether tripper is desired or not. If possible, give speed and diameter of shaft from which conveyor will be driven.

TROUGHING BELT CARRIERS



SIZES AND NET PRICES, EACH STAND

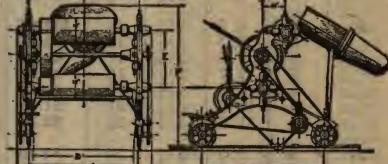
Belt Width Ins.	With Upper & Lower Pulleys	With Upper Pulleys Only	Dimensions, Inches			Wt. Upper and Lower	Wt. Upper Only
			A	B	F		
12	\$21.50	\$16.65	25 1/2	21 1/4	21 1/2	131	91
14	21.80	16.80	27 1/2	23 1/4	23 1/2	133	93
16	23.50	17.70	29 1/2	25 1/4	25 1/2	135	95
18	23.80	17.85	31 1/2	27 1/4	27 1/2	137	97
20	24.80	18.75	33 1/2	29 1/4	29 1/2	145	111
22	25.10	18.90	35 1/2	31 1/4	31 1/2	147	113
24	25.40	19.05	37 1/2	33 1/4	33 1/2	149	114
26	26.40	19.95	39 1/2	35 1/4	35 1/2	157	121
28	27.40	20.10	41 1/2	37 1/4	37 1/2	165	123
30	27.70	20.25	43 1/2	39 1/4	39 1/2	167	124
32	28.80	21.25	49 1/2	45 1/4	45 1/2	178	133
36	29.40	21.55	55 1/2	51 1/4	51 1/2	196	143

Hand Propelled

"A" Frame

Trippers

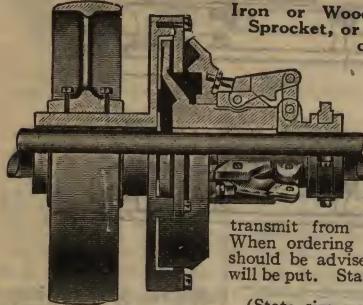
78A109 SIZES AND NET PRICES



Width Belt	Net Price	Weight Lbs.	Gauge Track	Height Inches	Wheel Base
18	\$380.00	1625	36 ins.	56	50 ins.
20	390.00	1775	38 "	56	50 "
22	400.00	1925	40 "	56	50 "
24	410.00	2075	42 "	56	50 "
26	420.00	2225	50 "	62	56 1/2 "
28	430.00	2375	52 "	62	56 1/2 "
30	440.00	2525	54 "	62	56 1/2 "
36	480.00	2675	60 "	62	56 1/2 "

FRICTION CLUTCHES AND PULLEYS

IMPROVED FRICTION CLUTCH WITH SLEEVE



Iron or Wood Split Pulley, Gear, Sprocket, or Sheave may be fitted on Sleeve.

Our Improved Friction Clutch is of such construction that it can be easily applied to stationary and portable machine tools and Countershafts, as well as Pulleys, Gears, Sprockets, or Sheaves. We furnish them to transmit from 3 to 400 Horse Power. When ordering a clutch or coupling, we should be advised of the use to which it will be put. State length of sleeve wanted.

(State size wanted and give full information when ordering.)

78M120

NET PRICE—DIMENSIONS, ETC.

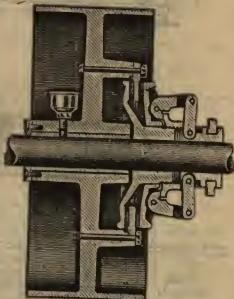
Size	Largest Bore	Space on Shaft of Clutch	Length of Sleeve	H. P. at 100 R. P. M.	Net Price, of Clutch with Strd. Sleeve.	Net Price extra per inch longer Sleeve
6	1 $\frac{1}{16}$ "	10 $\frac{1}{16}$ "	6	500	\$23.75	\$0.50
8	2 $\frac{1}{16}$ "	10 $\frac{1}{16}$ "	7	450	30.50	.65
10	2 $\frac{1}{16}$ "	11 $\frac{1}{16}$ "	8	400	37.50	.75
12	3 $\frac{1}{16}$ "	12 $\frac{1}{16}$ "	8	400	44.50	.80
14	3 $\frac{1}{16}$ "	14 $\frac{1}{16}$ "	10	350	52.75	.85
16	4 $\frac{1}{16}$ "	15 $\frac{1}{16}$ "	10	300	68.00	.90
18	4 $\frac{1}{16}$ "	17 $\frac{1}{16}$ "	12	300	85.00	.95
20	4 $\frac{1}{16}$ "	17 $\frac{1}{16}$ "	12	250	93.00	1.05
24	5 $\frac{1}{16}$ "	20 $\frac{1}{16}$ "	14	250	135.00	1.15
30	6"	22 $\frac{1}{16}$ "	16	200	138.00	1.25
36	6 $\frac{1}{16}$ "	24 $\frac{1}{16}$ "	20	200	290.00	

We can also furnish clutch without Hub for attaching direct to arms of pulleys or sheave wheels. Add 20% to above prices for split clutches.

78M122

SIZES AND

NET PRICES



FRICTION CLUTCH PULLEYS FOR LINE SHAFTS

Notice the simple design and the powerful leverage in our toggle arrangement. This latter feature is a very important factor, because it determines the degree of pressure that can be applied to the friction plates. The toggles also give the clutch a positive release. While the clutch is being disengaged the toggles come in contact with the outside diameter of the adjusting ring, and the friction plate is then forced away from the friction surface.

Our clutches have been tested with a proney brake and in determining the rated horse power a large factor of safety was employed.

The adjustment is made by means of a threaded ring screwed on to the clutch sleeve. This ring is split on one side and is clamped in place with a bolt. When adjusting, first loosen the clamping bolt then turn the ring to the right to tighten and to the left to loosen. This one ring adjusts all toggles at the same time, assuring a like pressure on each toggle. Retighten the clamping bolt before placing the strain on the adjusting ring.

The friction contact is wood to iron. Our experience has proved to us that regardless of what material the friction surfaces are made of, either one or both of them will wear, and in time must be renewed. With wood to iron, the iron plates cannot wear, and when the wood wears it can be replaced at little expense, making the clutch as good as new.

Diam., Ins.	Pace, Ins.	H. P. 100 R. P. M.	Largest Bore Ins.	Total Shaft Space	Net Price, Each	Diam., Ins.	Pace, Ins.	H. P. 100 R. P. M.	Largest Bore, Ins.	Total Shaft Space	Net Price, Each	Diam., Ins.	Pace, Ins.	H. P. 100 R. P. M.	Largest Bore, Ins.	Total Shaft Space	Net Price, Each
12	4	2.5	2	14	\$28.13	24	7	9.3	2 $\frac{1}{2}$	18	\$43.50	34	6	11.3	3 $\frac{1}{2}$	18	\$56.25
	3.5	3.5	2 $\frac{1}{2}$	15	30.38		8	10.5	3 $\frac{1}{2}$	20	52.50		7	13.2	3 $\frac{1}{2}$	19	58.13
	4.0	4.0	2 $\frac{1}{2}$	16	30.75		9	12.0	3 $\frac{1}{2}$	21	53.63		8	15.1	3 $\frac{1}{2}$	21	67.50
	4.5	4.5	2 $\frac{1}{2}$	17	31.31		10	13.0	3 $\frac{1}{2}$	22	54.94		9	17.0	3 $\frac{1}{2}$	22	69.38
14	4	3.0	2 $\frac{1}{2}$	14	30.38	26	4	5.6	2 $\frac{1}{2}$	14	34.50	36	6	12.0	3 $\frac{1}{2}$	18	57.75
	3.5	3.5	2 $\frac{1}{2}$	15	30.75		5	7.2	2 $\frac{1}{2}$	16	42.38		7	14.0	3 $\frac{1}{2}$	19	59.81
	4.0	4.5	2 $\frac{1}{2}$	16	31.50		6	8.5	2 $\frac{1}{2}$	17	43.50		8	16.0	3 $\frac{1}{2}$	21	69.19
	5.3	5.3	2 $\frac{1}{2}$	17	32.25		7	10.0	2 $\frac{1}{2}$	19	54.00		9	18.0	3 $\frac{1}{2}$	22	71.25
	8	5.5	2 $\frac{1}{2}$	19	39.38		9	12.3	3 $\frac{1}{2}$	21	55.31		10	20.0	4	24	83.44
16	4	3.5	2 $\frac{1}{2}$	14	30.75		10	13.5	3 $\frac{1}{2}$	22	56.63		12	24.0	4	26	87.75
	4.5	4.5	2 $\frac{1}{2}$	15	31.50	28	4	6.2	2 $\frac{1}{2}$	16	41.81		6	14.3	3 $\frac{1}{2}$	18	60.75
	5.3	5.3	2 $\frac{1}{2}$	16	32.25		5	7.2	2 $\frac{1}{2}$	17	43.13		7	15.5	3 $\frac{1}{2}$	20	70.50
	6.0	6.0	2 $\frac{1}{2}$	18	35.25		6	9.3	2 $\frac{1}{2}$	19	44.63		8	18.7	3 $\frac{1}{2}$	21	72.75
	7.0	7.0	2 $\frac{1}{2}$	19	40.13		7	10.3	3 $\frac{1}{2}$	20	54.00		9	22.4	4	24	87.00
18	4	4.0	2 $\frac{1}{2}$	14	31.50		8	12.4	3 $\frac{1}{2}$	19	55.31		10	27.9	4 $\frac{1}{2}$	28	107.25
	5.0	5.0	2 $\frac{1}{2}$	15	32.25		9	14.0	3 $\frac{1}{2}$	21	56.81		12	31.0	4 $\frac{1}{2}$	28	114.25
	6.0	6.0	2 $\frac{1}{2}$	16	33.00		10	15.5	3 $\frac{1}{2}$	23	66.00		14	37.5	4 $\frac{1}{2}$	30	133.13
	7.0	7.0	2 $\frac{1}{2}$	18	34.50	30	6	10.0	3 $\frac{1}{2}$	18	53.81		6	14.0	3 $\frac{1}{2}$	18	62.44
	8.0	8.0	2 $\frac{1}{2}$	19	41.06		7	11.5	3 $\frac{1}{2}$	19	55.31		8	18.0	3 $\frac{1}{2}$	21	73.88
20	4	4.5	2 $\frac{1}{2}$	14	32.06		8	13.3	3 $\frac{1}{2}$	20	56.81		10	23.8	4	24	89.81
	5.5	5.5	2 $\frac{1}{2}$	15	33.00		9	15.0	3 $\frac{1}{2}$	22	66.00		12	28.0	4 $\frac{1}{2}$	28	109.50
	6.5	6.5	2 $\frac{1}{2}$	17	40.31		10	15.6	3 $\frac{1}{2}$	23	67.50		6	15.5	3 $\frac{1}{2}$	19	73.13
	7.7	7.7	2 $\frac{1}{2}$	18	41.25		12	19.0	4	26	81.38		8	20.5	4	22	89.06
	8.8	8.8	2 $\frac{1}{2}$	19	42.19	32	6	10.5	3 $\frac{1}{2}$	18	54.75		10	25.5	4 $\frac{1}{2}$	26	109.31
	9.0	10.0	2 $\frac{1}{2}$	21	51.38		7	12.4	3 $\frac{1}{2}$	19	56.62		12	31.0	4 $\frac{1}{2}$	28	114.25
10	11.0	11.0	2 $\frac{1}{2}$	22	52.31		8	14.2	3 $\frac{1}{2}$	20	62.25		6	16.0	3 $\frac{1}{2}$	19	75.00
24	4	5.5	2 $\frac{1}{2}$	14	33.75		9	16.0	3 $\frac{1}{2}$	22	67.50		8	21.5	4	22	90.94
	6.5	6.5	2 $\frac{1}{2}$	16	34.88		10	17.7	3 $\frac{1}{2}$	23	69.38		10	26.5	4 $\frac{1}{2}$	26	114.38
	8.0	8.0	2 $\frac{1}{2}$	17	41.25		12	21.3	4	26	82.69		12	32.0	4 $\frac{1}{2}$	28	117.38
	14	24.8	4	29	87.00		14	24.8	4	29			14	37.5	4 $\frac{1}{2}$	30	

The prices given are for the pulleys, furnished with plain bores. For Split Clutches, add 20% to above prices. For High Speed Shafts, Pulleys should be bronze bushed.

Other sizes furnished. Prices on application.

78M123

Net Prices for Bronze Bushin; Pulleys to be added to above prices.

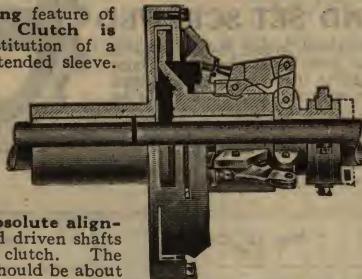
Size of Shaft	Price per Inch								
1 $\frac{7}{16}$	\$1.05	1 $\frac{1}{16}$	\$1.25	2 $\frac{1}{16}$	\$1.75	2 $\frac{1}{4}$	\$1.88	3 $\frac{1}{16}$	\$2.25
1 $\frac{1}{16}$	1.13	2 $\frac{1}{16}$	1.63	2 $\frac{1}{4}$	1.83	3 $\frac{1}{16}$	2.25	3 $\frac{1}{4}$	3.09

Multiply the Net Price per inch of bushing by the width of pulley face and add amount to price of Clutch Pulley.

Friction Clutch Pulleys and Couplings

IMPROVED CLUTCH OR CUT-OFF COUPLING

The Cut-Off Coupling feature of the Improved Split Clutch is obtained by the substitution of a hub in place of the extended sleeve. This hub is keyed to the shaft and is provided with a brass bushing for receiving the extended part of the shaft, to which the driving plate is keyed, thus making a true male and female bearing for shafts, and assuring absolute alignment. The driving and driven shafts are both keyed to the clutch. The ends of the two shafts should be about one-eighth of an inch apart. To secure the best results the two shafts should be perfectly in line. (State size wanted and give full information when ordering.)

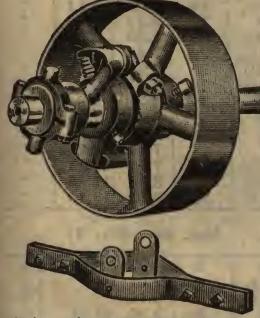


78M118 NET PRICE--DIMENSIONS, ETC.

Size	Largest Bore	Total Space on Shaft	H. P. at 100 R. P. M.	Net Price
6	1 $\frac{1}{4}$ in.	12 $\frac{1}{2}$ in.	3	\$26.00
8	2 $\frac{1}{4}$ in.	14 in.	8	32.00
10	2 $\frac{1}{4}$ in.	15 $\frac{1}{2}$ in.	12	39.00
12	3 $\frac{1}{4}$ in.	16 $\frac{1}{2}$ in.	16	48.00
14	4 $\frac{1}{2}$ in.	18 $\frac{1}{2}$ in.	22	60.00
16	4 $\frac{1}{2}$ in.	18 $\frac{1}{2}$ in.	27	74.00
18	5 in.	20 in.	36	80.00
20	6 in.	21 in.	48	99.00
24	6 $\frac{1}{2}$ in.	24 $\frac{1}{4}$ in.	65	136.00
30	7 $\frac{1}{2}$ in.	27 $\frac{1}{4}$ in.	100	210.00
36	8 in.	29 $\frac{1}{8}$ in.	145	270.00

For price on Split Couplings add 20% to the above prices.

MASTER CONTRACTING BAND CLUTCH PULLEY



mission where the strain is an even pull.

78M114 SIZES--NET PRICES, ETC.

Dia. In.	Face, In.	H. P. 100 R. P. M.	Space on Shaft	Net Price, Each	Dia. In.	Face, In.	H. P. 100 R. P. M.	Space on Shaft	Net Price, Each
6	3	0.8	11 $\frac{1}{2}$ "	\$12.82	13	3	1.8	11 $\frac{3}{8}$ "	\$15.26
	4	1.1	12 $\frac{1}{8}$ "	13.25		4	2.3	11 $\frac{3}{8}$ "	16.14
	5	1.4	13 $\frac{1}{8}$ "	14.18		5	2.8	11 $\frac{3}{8}$ "	17.57
	6	1.6	14 $\frac{1}{8}$ "	14.79		6	3.4	12 $\frac{3}{8}$ "	21.08
7	3	1.0	11 $\frac{1}{8}$ "	13.10	14	3	1.9	11 $\frac{3}{8}$ "	15.68
	4	1.3	12 $\frac{1}{8}$ "	13.59		4	2.5	11 $\frac{3}{8}$ "	16.61
	5	1.6	13 $\frac{1}{8}$ "	14.67		5	3.0	11 $\frac{3}{8}$ "	18.15
	6	1.8	14 $\frac{1}{8}$ "	15.26		6	3.6	12 $\frac{3}{8}$ "	21.75
8	3	1.2	11 $\frac{1}{8}$ "	13.37	15	3	2.0	11 $\frac{3}{8}$ "	16.07
	4	1.4	11 $\frac{1}{8}$ "	13.98		4	2.7	11 $\frac{3}{8}$ "	17.10
	5	1.8	11 $\frac{1}{8}$ "	15.06		5	3.2	11 $\frac{3}{8}$ "	21.27
	6	2.1	12 $\frac{1}{8}$ "	15.67		6	3.9	12 $\frac{3}{8}$ "	22.35
9	3	1.2	11 $\frac{1}{8}$ "	13.79	16	3	2.1	11 $\frac{3}{8}$ "	16.88
	4	1.6	11 $\frac{1}{8}$ "	14.40		4	2.8	11 $\frac{3}{8}$ "	17.84
	5	2.0	11 $\frac{1}{8}$ "	15.52		5	3.4	11 $\frac{3}{8}$ "	22.02
	6	2.4	12 $\frac{1}{8}$ "	16.22		6	4.2	12 $\frac{3}{8}$ "	23.16
10	3	1.4	11 $\frac{1}{8}$ "	14.25	18	3	2.4	11 $\frac{3}{8}$ "	17.69
	4	1.8	11 $\frac{1}{8}$ "	14.94		4	3.1	11 $\frac{3}{8}$ "	18.99
	5	2.2	11 $\frac{1}{8}$ "	16.14		5	4.0	11 $\frac{3}{8}$ "	23.37
	6	2.6	12 $\frac{1}{8}$ "	16.88		6	4.7	12 $\frac{3}{8}$ "	24.65
11	3	1.5	11 $\frac{1}{8}$ "	14.60	20	3	2.7	11 $\frac{3}{8}$ "	18.65
	4	2.0	11 $\frac{1}{8}$ "	15.26		4	3.6	11 $\frac{3}{8}$ "	22.62
	5	2.4	11 $\frac{1}{8}$ "	16.61		5	4.4	11 $\frac{3}{8}$ "	24.65
	6	2.9	12 $\frac{1}{8}$ "	17.46					
12	3	1.6	11 $\frac{1}{8}$ "	14.94	22	3	3.0	11 $\frac{3}{8}$ "	20.39
	4	2.1	11 $\frac{1}{8}$ "	15.75		4	3.9	11 $\frac{3}{8}$ "	24.59
	5	2.6	11 $\frac{1}{8}$ "	17.10		5	4.2	11 $\frac{3}{8}$ "	24.05
	6	3.1	12 $\frac{1}{8}$ "	20.53		4	4.1	11 $\frac{3}{8}$ "	25.86

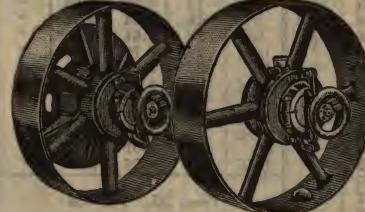
All Single Belt Pulleys—Largest Bore is 2 $\frac{1}{16}$ inch.

Add 20% for Babbitt Pulleys and 50% for Split Pulleys.

Intermediate Sizes Take Next Higher Price.

"LEMLEY" FRICTION CLUTCHES

For Gasoline Engines.



No. 2 Clutch No. 1 Clutch

be replaced at little expense, making the clutch as good as new.

SAVE TIME BY GIVING FULL INFORMATION.

No. 1 CLUTCH

In ordering, state distance from rim to end of hub. Width of key seat in shaft. Diameter of shaft. Length of projecting shaft. Give horsepower of engine. Give speed of engine.

No. 2 CLUTCH

Same as No. 1 Clutch pulley except that it is made with a spider to bolt on to the arms of the engine fly wheel. In ordering state or give full description of fly wheel and as required for No. 1 clutch.

78M116 SIZES AND NET PRICES

Diam. Pulley, Inches	Face Pulley, Inches	H. P. of Engine	Largest Shaft No. 1 Clutch will take	Largest Bore for No. 1 Clutch	Net Price, No. 1 Clutch	Net Price, No. 2 Clutch
10	6	8	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	\$22.31	\$29.31
10	8	8	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	23.25	30.25
12	6	8	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	23.25	30.25
12	8	8	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	24.38	31.38
14	6	8	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	24.00	31.00
14	8	8	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	25.50	32.50
16	8	8	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	26.25	33.25
16	10	14	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	31.12	39.12
16	12	20	8 $\frac{1}{4}$ "	4"	48.75	60.75
18	8	14	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	30.75	38.75
18	10	16	8 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "	39.38	49.38
18	12	30	8 $\frac{1}{4}$ "	4"	48.75	60.75
20	8	14	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	31.88	39.88
20	10	16	8 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "	39.56	49.56
20	12	20	8 $\frac{1}{4}$ "	4"	56.25	71.25
22	8	14	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	33.00	41.00
22	10	16	8 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "	41.25	51.25
22	12	20	9 $\frac{1}{4}$ "	4"	54.75	66.75
24	8	14	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	35.25	43.25
24	10	16	8 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "	43.50	53.50
24	12	20	8 $\frac{1}{4}$ "	4"	57.00	69.00
26	8	14	6 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	35.62	43.62
26	10	16	8 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "	44.06	54.06
26	12	20	8 $\frac{1}{4}$ "	4"	60.00	72.00
28	10	20	8 $\frac{1}{4}$ "	4"	58.50	70.50
28	12	30	9 $\frac{1}{4}$ "	4"	66.75	81.75
30	10	20	8 $\frac{1}{4}$ "	4"	60.75	72.75
30	12	30	9 $\frac{1}{4}$ "	4"	69.00	84.00

Other Sizes furnished—Prices on application.

We are equipped to furnish Friction Clutches for all sizes of Gas and Gasoline Engines.

Write for prices, giving full description of Engine.



Cast Iron Sprocket Wheels

BORED, KEY SEATED AND SET SCREWED

Prices below are for sprockets bored not larger than specified. We can furnish sprockets with any size bore under the largest bore given at the price quoted. For larger bores than specified, see extra list on page 71. Some size wheels take several numbers of chain as in the case of numbers 35, 45 and 55, or 57, 67 and 77, etc.

When ordering sprockets with clutch hubs, state whether clutch is to be on right or left side as top of wheel turns from you.



NET PRICES—78M1000

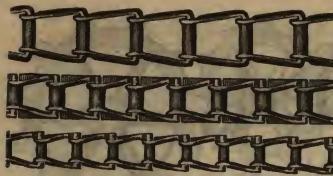
No. 25				Nos. 33 and 34 (Cont.)				No. 42 (Cont.)				No. 62 (Cont.)					
Pitch Dia., Inches	No. of Teeth	Net Price, Solid	Net Price, Split	Pitch Dia., Inches	No. of Teeth	Net Price, Solid	Net Price, Split	Pitch Dia., Inches	No. of Teeth	Net Price, Solid	Net Price, Split	Pitch Dia., Inches	No. of Teeth	Net Price, Solid	Net Price, Split	Largest Bore at Price	
1 1/2	5	\$1.44		5 1/2	12	\$1.85	\$3.20	1 1/2	20	\$2.61	\$4.01	1 1/2	12	\$2.30	\$3.87	1 1/2	
1 3/4	6	1.44		6 1/2	14	1.98	3.33	2 1/2	22	2.79	4.28	2 1/2	14	2.48	4.05	2 1/2	
2	7	1.44		6 3/4	15	2.07	3.42	3 1/2	24	3.02	4.50	3 1/2	15	2.61	4.19	3 1/2	
2 1/2	8	1.44	\$2.57	7 1/2	16	2.16	3.56	4 1/2	27	3.33	4.86	4 1/2	16	2.75	4.46	4 1/2	
2 1/2	9	1.49		8	18	2.25	3.65	5 1/2	28	3.42	4.95	5 1/2	18	3.02	4.73	5 1/2	
3	10	1.53		8 1/2	19	2.34	3.74	6 1/2	32	3.83	5.45	6 1/2	19	3.15	4.86	6 1/2	
3 1/4	11	1.53		9 3/4	22	2.61	4.10	7 1/2	36	4.32	6.03	7 1/2	20	3.29	5.00	7 1/2	
3 1/2	12	1.58		10 3/4	24	2.79	4.28	8 1/2	41	4.91	6.75	8 1/2	22	3.56	5.45	8 1/2	
3 3/4	13	1.58		12	27	3.11	4.64	9 1/2	46	5.54	7.47	9 1/2	23	3.69	5.58	9 1/2	
4	14	1.62	2.75	12 1/2	28	3.20	4.73	10 1/2	55	6.66	8.69	10 1/2	28	4.41	6.48	10 1/2	
4 1/2	15	1.62	2.75	13	29	3.33	4.86	11 1/2				11 1/2	30	4.77	6.84	11 1/2	
4 1/2	16	1.67	2.84	14 1/2	32	3.60	5.22	12 1/2				12 1/2	34	5.49	7.70	12 1/2	
5	17	1.71	2.88	15 1/2	34	3.78	5.40	13 1/2				13 1/2	38	6.21	8.64	13 1/2	
5 1/4	18	1.71	2.88	16	36	4.01	5.72	14 1/2				14 1/2	43	7.11	9.72	14 1/2	
5 1/2	19	1.76	2.93	18 1/2	41	4.55	6.39	15 1/2				15 1/2	45	7.51	10.13	15 1/2	
6	21	1.85	3.02					16 1/2				16 1/2	49	8.33	11.25	16 1/2	
6 1/4	22	1.89	3.06					17 1/2				17 1/2	58	10.62	14.13	17 1/2	
6 3/4	23	1.94	3.11					18 1/2				18 1/2				18 1/2	
7	24	1.98	3.15					19 1/2				19 1/2				19 1/2	
7 1/4	25	2.03	3.20					20 1/2				20 1/2				20 1/2	
7 1/2	26	2.07	3.29					21 1/2				21 1/2				21 1/2	
7 3/4	27	2.12	3.33					22 1/2				22 1/2				22 1/2	
8	28	2.16	3.38					23 1/2				23 1/2				23 1/2	
8 1/4	30	2.25	3.47					24 1/2				24 1/2				24 1/2	
9	32	2.34	3.57					25 1/2				25 1/2				25 1/2	
9 1/4	33	2.43	3.65					26 1/2				26 1/2				26 1/2	
9 3/4	34	2.48	3.69					27 1/2				27 1/2				27 1/2	
10	35	2.52	3.74					28 1/2				28 1/2				28 1/2	
10 1/4	37	2.70	4.01					29 1/2				29 1/2				29 1/2	
11 1/2	40	2.88	4.28					30 1/2				30 1/2				30 1/2	
12	42	3.02	4.38					31 1/2				31 1/2				31 1/2	
12 1/2	44	3.11	4.46					32 1/2				32 1/2				32 1/2	
13	45	3.15	4.50					33 1/2				33 1/2				33 1/2	
13 3/4	48	3.38	4.77					34 1/2				34 1/2				34 1/2	
14 1/2	50	3.51	4.95					35 1/2				35 1/2				35 1/2	
15	52	3.65	5.10					36 1/2				36 1/2				36 1/2	
15 1/2	54	3.83	5.22					37 1/2				37 1/2				37 1/2	
16	56	3.92	5.40					38 1/2				38 1/2				38 1/2	
17 1/2	60	4.23	5.72					39 1/2				39 1/2				39 1/2	
18 1/2	64	4.50	6.03					40 1/2				40 1/2				40 1/2	
20	70	5.40	6.89					41 1/2				41 1/2				41 1/2	
24	84	6.93	8.73					42 1/2				42 1/2				42 1/2	
No. 32				Nos. 35, 45, 55				No. 51				No. 52				No. 57, 67, 77	
2	5	\$1.49		2 1/2	5	\$1.80		1 1/2	4	1.77	2.97	1 1/2	4	\$2.07		1 1/2	
2 1/2	6	1.49		3	6	1.85		1 1/2	4 1/2	3.00	4.28	1 1/2	5	2.07		1 1/2	
3	8	1.53	\$2.70	3 1/2	7	1.89		1 1/2	5	1.94	3.15	1 1/2	6	2.16		1 1/2	
3 1/2	9	1.58	2.75	4 1/2	8	1.94	\$3.33	1 1/2	5 1/2	1.94	3.15	1 1/2	7	2.26		1 1/2	
3 3/4	10	1.62	2.79	5 1/2	10	2.03	3.42	1 1/2	5 1/2	1.98	3.29	1 1/2	8	2.30	\$3.83	1 1/2	
4 1/2	12	1.71	2.93	6 1/2	12	2.12	3.60	1 1/2	6 1/2	2.03	3.33	1 1/2	9	2.43	3.96	1 1/2	
4 3/4	13	1.77	2.97	7 1/2	14	2.16	3.65	1 1/2	7 1/2	2.17	3.43	1 1/2	10	2.61	4.14	1 1/2	
5 1/2	15	1.85	3.06	8 1/2	15	2.37	3.74	1 1/2	8 1/2	2.29	3.47	1 1/2	11	2.79	4.46	1 1/2	
5 3/4	16	1.89	3.20	9 1/2	16	2.49	4.01	1 1/2	9 1/2	2.34	3.50	1 1/2	12	2.97	4.64	1 1/2	
7 1/2	20	2.07	3.38	10 1/2	17	2.62	4.01	1 1/2	10 1/2	2.40	3.60	1 1/2	13	3.15	4.82	1 1/2	
8	22	2.21	3.60	11 1/2	18	2.85	11.39	1 1/2	11 1/2	2.52	4.14	1 1/2	14	3.32	5.04	1 1/2	
8 1/2	23	2.30	3.69	12 1/2	19	3.04	12.38	1 1/2	12 1/2	2.61	4.22	1 1/2	15	3.60	5.27	1 1/2	
8 3/4	24	2.34	3.74	13 1/2	20	3.07	13.41	1 1/2	13 1/2	2.70	4.31	1 1/2	16	3.83	5.76	1 1/2	
9 1/4	25	2.43	3.83	14 1/2	21	3.12	14.47	1 1/2	14 1/2	2.79	4.41	1 1/2	17	4.05	5.99	1 1/2	
10	27	2.57	4.01	15 1/2	22	3.17	15.57	1 1/2	15 1/2	2.88	4.50	1 1/2	18	4.28	6.21	1 1/2	
12	33	3.06	4.55	16 1/2	23	3.20	16.57	1 1/2	16 1/2	2.97	4.66	1 1/2	19	4.50	6.44	1 1/2	
13 1/4	36	3.33	4.86	17 1/2	24	3.24	17.57	1 1/2	17 1/2	3.06	4.80	1 1/2	20	4.73	6.66	1 1/2	
14	38	3.57	5.04	18 1/2	25	3.29	18.57	1 1/2	18 1/2	3.14	4.96	1 1/2	21	5.05	7.11	1 1/2	
14 1/2	40	3.69	5.22	19 1/2	26	3.34	19.57	1 1/2	19 1/2	3.23	5.13	1 1/2	22	5.32	7.24	1 1/2	
15	41	3.78	5.31	20 1/2	27	3.38	20.57	1 1/2	20 1/2	3.34	5.24	1 1/2	23	5.60	7.52	1 1/2	
16 1/2	44	4.01	5.63	21 1/2	28	3.42	21.57	1 1/2	21 1/2	3.47	5.35	1 1/2	24	5.84	7.82	1 1/2	
Nos. 33 and 34				No. 42				No. 62				No. 66					
3	7	\$1.58		3 1/2	7	\$1.71		1 1/2	22	4.66	6.57	1 1/2	7	\$2.03		1 1/2	
3 1/2	8	1.62	\$2.93	4 1/2	8	1.76		1 1/2	23	4.80	6.78	1 1/2	8	2.43	3.96	1 1/2	
4	9	1.67	2.97	5 1/2	9	1.80	\$3.11	1 1/2	24	5.04	7.67	1 1/2	9	2.57	4.10	1 1/2	
4 1/2	10	1.71	3.02	6 1/2	10	1.83	3.24	1 1/2	25	5.21	7.84	1 1/2	10	2.70	4.23	1 1/2	
5	11	1.80	3.15	7 1/2	11	2.07	3.42	1 1/2	26	5.38	7.94	1 1/2	11	2.87	4.36	1 1/2	

Cast Iron Sprocket Wheels

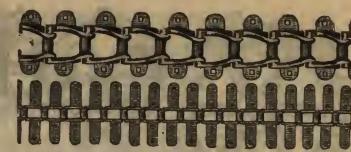
CONTINUED

BORED AND KEY SEATED OR SET SCREWED
78M1000 Sizes and Net Prices

Nos. 75, 78, 88				Nos. 75, 78, 88 (Cont.)				Nos. 85, 95 (Cont.)				No. 103 (Cont.)			
Pitch Dia., Inches	No. of Teeth	Net Price Solid	Net Price Split	Pitch Dia., Inches	No. of Teeth	Net Price Solid	Net Price Split	Pitch Dia., Inches	No. of Teeth	Net Price Solid	Net Price Split	Pitch Dia., Inches	No. of Teeth	Net Price Solid	Net Price Split
4 1/4	5	\$2.48	....	1"	33	\$10.40	\$14.27	2 1/8"	13	\$6.12	\$8.46	2 1/4"	17	\$7.25	\$10.53
6	6	2.61	....	1 1/8"	34	10.76	14.63	14 1/4"	11	6.57	9.59	17 1/2"	18	7.61	10.89
6	7	2.79	....	1 1/8"	35	11.12	14.99	16 1/4"	13	7.56	10.58	18 1/2"	19	8.01	11.30
6 3/4	8	2.97	\$4.64	1 1/8"	30	11.48	15.84	18	14	8.10	11.12	19 1/2"	20	8.46	11.75
7 1/2	9	3.15	4.82	2 1/8"	31	11.88	16.25	19 1/4"	15	8.73	11.75	21 1/2"	22	9.32	13.28
8 1/4	10	3.38	5.04	2 1/8"	32	12.29	16.65	20 1/2"	16	9.36	13.23	22 1/2"	23	9.72	13.68
9 1/4	11	3.60	5.55	2 1/8"	33	12.69	17.06	23	18	10.53	14.40	23 1/2"	24	10.08	14.04
10	12	3.87	5.85	2 1/8"	34	13.14	17.51	24 1/4"	19	11.16	15.03	25 1/2"	26	11.03	15.66
10 3/4	13	4.14	6.12	2 1/8"	35	14.13	19.04	30 7/8"	24	14.85	19.62	27 1/2"	28	11.97	16.61
11 1/4	14	4.41	6.39	2 1/8"	36	15.08	19.98	33 1/8"	26	16.83	22.46	30 1/4"	31	13.68	19.04
12 1/2	15	4.68	6.66	2 1/8"	37	16.07	21.51	34 1/2"	27	17.73	23.36	32 1/2"	33	15.12	20.48
13 1/4	16	5.00	7.43	2 1/8"	38	17.06	22.50	35 1/4"	28	18.81	24.44	37 1/4"	38	19.08	25.11
14 1/4	17	5.31	7.74	2 1/8"	39	17.55	23.00	60	47	40.95	50.22	41	42	22.32	29.03
15	18	5.63	8.06	2 1/8"	40	18.00	23.45	45	52	18.99	24.98	45	46	25.38	32.76
15 3/4	19	5.94	8.37	2 1/8"	41	19.55	24.00	48	54	20.25	26.24	47 1/4"	49	27.68	35.06
16 1/4	20	6.26	8.69	2 1/8"	42	21.00	24.55	50	60	23.40	29.88	66	68	42.75	52.70
17 1/2	21	6.57	9.45	2 1/8"	43	22.32	28.85	52	65	27.00	34.07	6	7	\$3.24	\$5.13
18 1/4	22	6.89	9.77	2 1/8"	44	23.40	29.88	54	77	36.00	44.73	7	8	3.60	5.49
19 1/4	23	7.20	10.08	2 1/8"	45	24.75	30.00	55	7	3.96	6.12	9	9	4.32	6.48
20	24	7.52	10.40	2 1/8"	46	26.25	32.45	56	10	4.73	6.89	10 1/2"	11	5.09	7.74
20 1/4	25	7.83	10.71	2 1/8"	47	27.00	34.07	57	11	5.74	8.46	11 1/2"	12	5.45	8.10
21 1/4	26	8.15	11.52	2 1/8"	48	28.00	35.00	58	12	6.89	9.81	12 1/2"	13	5.81	8.46
22 1/4	27	8.46	11.84	2 1/8"	49	29.00	36.00	59	13	7.24	10.17	13 1/2"	14	6.17	8.82
23 1/4	28	8.78	12.15	2 1/8"	50	30.00	37.00	60	14	7.68	10.18	14 1/2"	15	6.53	9.18
24 1/4	29	9.09	12.47	2 1/8"	51	31.00	38.00	61	15	8.09	10.17	15 1/2"	16	6.89	10.17
25	30	9.41	12.78	2 1/8"	52	32.00	39.00	62	16	8.46	10.17	16 1/2"	17	7.25	10.17
25 3/4	31	9.72	13.59	2 1/8"	53	33.00	40.00	63	17	8.82	10.17	17 1/2"	18	7.61	10.17
26 3/4	32	10.04	13.91	2 1/8"	54	34.00	41.00	64	18	9.18	10.17	18 1/2"	19	8.01	10.17
				2 1/8"	55	35.00	42.00	65	19	9.55	10.17	19 1/2"	20	8.38	10.17
				2 1/8"	56	36.00	43.00	66	20	9.92	10.17	20 1/2"	21	8.75	10.17
				2 1/8"	57	37.00	44.00	67	21	10.28	10.17	21 1/2"	22	9.12	10.17
				2 1/8"	58	38.00	45.00	68	22	10.65	10.17	22 1/2"	23	9.49	10.17
				2 1/8"	59	39.00	46.00	69	23	11.02	10.17	23 1/2"	24	9.86	10.17
				2 1/8"	60	40.00	47.00	70	24	11.39	10.17	24 1/2"	25	10.23	10.17
				2 1/8"	61	41.00	48.00	71	25	11.76	10.17	25 1/2"	26	10.60	10.17
				2 1/8"	62	42.00	49.00	72	26	12.13	10.17	26 1/2"	27	10.97	10.17
				2 1/8"	63	43.00	50.00	73	27	12.50	10.17	27 1/2"	28	11.34	10.17
				2 1/8"	64	44.00	51.00	74	28	12.87	10.17	28 1/2"	29	11.71	10.17
				2 1/8"	65	45.00	52.00	75	29	13.24	10.17	29 1/2"	30	12.08	10.17
				2 1/8"	66	46.00	53.00	76	30	13.61	10.17	30 1/2"	31	12.45	10.17
				2 1/8"	67	47.00	54.00	77	31	13.98	10.17	31 1/2"	32	12.82	10.17
				2 1/8"	68	48.00	55.00	78	32	14.35	10.17	32 1/2"	33	13.19	10.17
				2 1/8"	69	49.00	56.00	79	33	14.72	10.17	33 1/2"	34	13.56	10.17
				2 1/8"	70	50.00	57.00	80	34	15.09	10.17	34 1/2"	35	13.93	10.17
				2 1/8"	71	51.00	58.00	81	35	15.46	10.17	35 1/2"	36	14.30	10.17
				2 1/8"	72	52.00	59.00	82	36	15.83	10.17	36 1/2"	37	14.67	10.17
				2 1/8"	73	53.00	60.00	83	37	16.20	10.17	37 1/2"	38	15.04	10.17
				2 1/8"	74	54.00	61.00	84	38	16.57	10.17	38 1/2"	39	15.41	10.17
				2 1/8"	75	55.00	62.00	85	39	16.94	10.17	39 1/2"	40	15.78	10.17
				2 1/8"	76	56.00	63.00	86	40	17.31	10.17	40 1/2"	41	16.15	10.17
				2 1/8"	77	57.00	64.00	87	41	17.68	10.17	41 1/2"	42	16.52	10.17
				2 1/8"	78	58.00	65.00	88	42	18.05	10.17	42 1/2"	43	16.89	10.17
				2 1/8"	79	59.00	66.00	89	43	18.42	10.17	43 1/2"	44	17.26	10.17
				2 1/8"	80	60.00	67.00	90	44	18.79	10.17	44 1/2"	45	17.63	10.17
				2 1/8"	81	61.00	68.00	91	45	19.16	10.17	45 1/2"	46	18.00	10.17
				2 1/8"	82	62.00	69.00	92	46	19.53	10.17	46 1/2"	47	18.37	10.17
				2 1/8"	83	63.00	70.00	93	47	19.90	10.17	47 1/2"	48	18.74	10.17
				2 1/8"	84	64.00	71.00	94	48	20.27	10.17	48 1/2"	49	19.11	10.17
				2 1/8"	85	65.00	72.00	95	49	20.64	10.17	49 1/2"	50	19.48	10.17
				2 1/8"	86	66.00	73.00	96	50	21.01	10.17	50 1/2"	51	19.85	10.17
				2 1/8"	87	67.00	74.00	97	51	21.38	10.17	51 1/2"	52	20.22	10.17
				2 1/8"	88	68.00	75.00	98	52	21.75	10.17	52 1/2"	53	20.59	10.17
				2 1/8"	89	69.00	76.00	99	53	22.12	10.17	53 1/2"	54	20.96	10.17
				2 1/8"	90	70.00	77.00	100	54	22.49	10.17	54 1/2"	55	21.33	10.17
				2 1/8"	91	71.00	78.00	101	55	22.86	10.17	55 1/2"	56	21.70	10.17
				2 1/8"	92	72.00	79.00	102	56	23.23	10.17	56 1/2"	57	22.07	10.17
				2 1/8"	93	73.00	80.00	103	57	23.60	10.17	57 1/2"	58	22.44	10.17
				2 1/8"	94	74.00	81.00	104	58	23.97	10.17	58 1/2"	59	22.81	10.17
				2 1/8"	95	75.00	82.00	105	59	24.34	10.17	59 1/2"	60	23.18	10.17
				2 1/8"	96	76.00	83.00	106	60	24.71	10.17	60 1/2"	61	23.55	10.17
				2 1/8"	97	77.00	84.00	107	61	25.08	10.17	61 1/2"	62	23.92	10.17
				2 1/8"	98	78.00	85.00	108	62	25.45	10.17	62 1/2"	63	24.29	10.17
				2 1/8"	99	79.00	86.00	109	63	25.82	10.17	63 1/2"	64	24.66	10.17
				2 1/8"	100	80.00	87.00	110	64	26.19	10.17	64 1/2"	65	25.03	10.17
				2 1/8"	101	81.00	88.00	111	65	26.56	10.17	65 1/2"	66	25.40	10.17
				2 1/8"	102	82.00	89.00	112	66	26.93	10.17	66 1/2"	67	25.77	10.17
				2 1/8"	103	83.00	90.00	113	67	27.30	10.17	67 1/2"	68	26.14	10.17
				2 1/8"	104	84.00	91.00	114	68	27.67	10.17	68 1/2"	69	26.51	10.17
				2 1/8"	105	85.00	92.00	115	69	28.04	10.17	69 1/2"	70	26.88	10.17
				2 1/8"	106	86.00	93.00	116	70	28.41	10.17	70 1/2"	71	27.25	10.17
				2 1/8"	107	87.00	94.00	117	71	28.78	10.17	71 1/2"	72	27.62	10.17
				2 1/8"	108	88.00	95.00	118	72	29.15	10.17	72 1/2"	73	28.00	10.17
				2 1/8"	109	89.00	96.00	119	73	29.52	10.17	73 1/2"	74	28.37	10.17
				2 1/8"	110	90.00	97.00	120	74	29.8					



Link Chain Belting



STANDARD SIZES PLAIN LINK BELTING

78M1002

Net Prices Per Foot

Number	Net Price per foot	Approximate Links per 10 feet	Net Price Couplers per pair	Number	Net Price per foot	Approximate Links per 10 feet	Net Price Couplers per pair	Number	Net Price per foot	Approximate Links per 10 feet	Net Price Couplers per pair
25	\$0.12	133	\$0.12	52	\$0.18	80	\$0.18	78	\$0.35	46	\$0.35
32	.13	104	.13	55	.16	74	.16	83	.41	30	.41
33	.12	86	.12	57	.19	52	.19	85	.46	30	.46
34	.14	86	.14	62	.22	73	.22	88	.40	46	.40
35	.14	74	.14	66	.26	60	.26	93	.60	30	...
42	.15	88	.15	67	.23	52	.23	95	.50	30	.50
45	.13	74	.13	75	.22	46	.22	103	.58	39	.58
51	.18	104	.18	77	.26	52	.26	108	.....	25	.....

RUN LINK CHAIN BELTING WITH BACK OF COUPLING HOOK TO THE WHEEL—ON DRIVES HOOK COMES IN CONTACT WITH SPROCKET FIRST—ON ELEVATORS AND CONVEYORS THE BAR COMES IN CONTACT WITH SPROCKET FIRST.

ODD SIZES OF PLAIN LINK BELTING

78M1004

Net Prices Per Foot

Number	Net Price per foot	Approximate Links per 10 feet	Number	Net Price per foot	Approximate Links per 10 feet	Number	Net Price per foot	Approximate Links per 10 feet	Number	Net Price per foot	Approximate Links per 10 feet
23	\$0.23	185	47	\$0.22	74	057	\$0.24	74	072½	\$0.50	72
024	.28	133	48	.20	60	58	.30	75	72½	.52	73
025	.21	120	50	.22	88	062	.33	73	075	.38	46
31	.24	132	052	.30	80	62 Keeper	.30	73	76½	.35	58
032	.25	104	52½ Light	.23	80	063	.35	80	88½	.77	46
37	.17	60	52½ Heavy	.30	79	65	.29	57	93	.75	37
042	.26	88	055	.24	74	071½	.49	58	104½	.98	30
42 Keeper	.21	88	55 Keeper	.22	74	072	.47	73	E1	.35	59
44	.22	81	55½	.25	74	72	.48	59	3 Bar	.40	79
45 Keeper	.18	74	56½	.29	74	.....	.....	.....	.....	.....	.....

STEEL BUSHED ROLLER CHAIN

78M1005

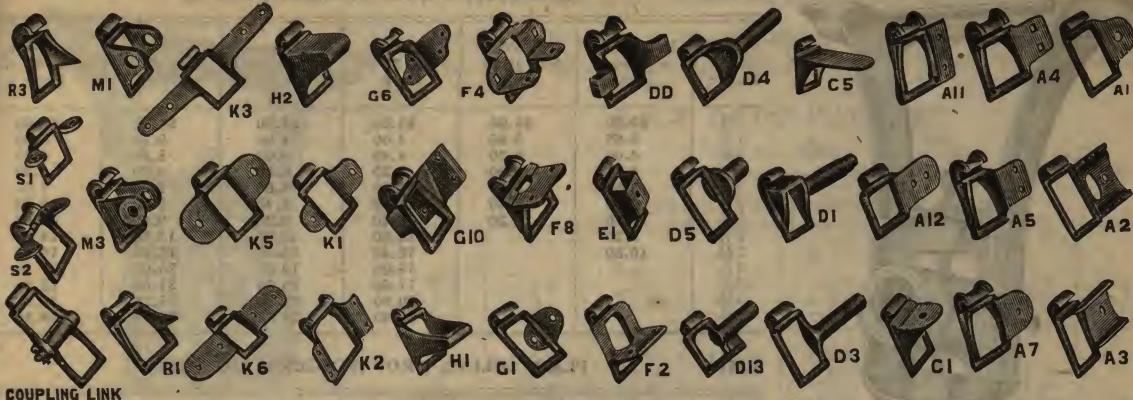
Size	Average Links to 10 feet	Average Ultimate Strength pounds	Runs on Sprockets No.	Price per foot Malleable Rollers	Price per foot Steel Rollers	Price of Couplers Each
EC- 62	73	7000	62	\$1.00	\$1.20	\$0.30
EC- 88	46	11000	88	.90	1.05	.35
EC-103	39	11500	103	1.10	1.50	.60

POWER TRANSMITTED BY DETACHABLE LINK BELTING

The following table gives the approximate horse-power transmitted by the different chains at 100 to 800 feet per minute under average conditions. The estimates are conservatively made. Where resistance is uniform and other conditions are favorable, it would be quite safe to figure on higher results. If, however, the chain is subject to shocks, or there are any other unfavorable conditions, proper allowance must be made.

Size No.	Average Ultimate Strength Pounds	Equivalent to Leather Belting	SPEED IN FEET PER MINUTE							
			100	200	300	400	500	600	700	800
APPROXIMATE HORSE POWER										
25	700	1-in. Single	.14	.42	.63	.82	1.05	1.25	1.40	1.60
32	1100	1½-in. "	.36	.75	1.05	1.35	1.65	1.95	2.25	2.55
33	1190	2-in. "	.45	.85	1.25	1.40	1.60	2.00	2.45	2.60
34	1300	2½-in. "	.45	.85	1.20	1.65	2.05	2.33	2.60	2.90
35	1200	2½-in. "	.50	.93	1.30	1.70	2.15	2.40	2.65	3.00
42	1500	3-in. "	.55	1.00	1.50	2.10	2.55	2.95	3.40	3.75
45	1600	3½-in. "	.60	1.15	2.30	3.00	3.65	4.25	5.00	5.60
51	1900	3½-in. "	.65	1.35	1.75	2.35	2.90	3.50	3.90	4.20
52	2300	4-in. "	.83	1.65	1.75	2.35	2.90	3.35	3.85	4.30
55	2200	4-in. "	.75	1.55	2.45	3.15	3.95	4.65	5.25	5.85
57	2800	6-in. "	1.05	2.00	3.15	4.10	4.75	5.55	6.25	6.95
62	3100	6½-in. "	1.15	2.10	3.00	4.00	4.75	5.60	5.15	6.85
66	2600	6-in. "	1.25	2.45	3.20	4.25	4.85	5.60	6.30	7.00
67	3300	7-in. "	1.35	2.60	2.80	3.80	4.55	5.25	5.85	6.50
75	4000	8-in. "	1.45	2.85	4.80	6.50	7.65	8.75	9.50	10.25
77	3600	7½-in. "	1.55	3.05	3.30	4.50	5.25	6.05	6.80	7.50
78	4900	10-in. "	1.80	3.60	3.95	5.25	6.35	7.35	8.35	9.35
83	4950	12-in. "	2.05	4.10	4.55	6.05	7.30	8.50	9.50	10.50
88	5750	8-in. Double	2.05	4.05	6.00	8.10	9.80	11.50	12.50	13.50
95	8700	10-in. "	2.95	6.05	9.10	11.60	13.50	15.50	17.50	19.50
103	9600	12-in. "	3.55	7.10	9.10	11.40	13.50	15.50	17.50	19.50
114	11000	13-in. "	4.05	8.10	11.95	15.00	17.50	19.50	21.50	23.50
124	12700	18-in. "	4.55	9.05	13.05	16.15	18.50	20.50	22.50	24.50

ATTACHMENT LINKS FOR LINK BELTING



No. 78M1006

NET PRICES, EACH.

No. 25	No. 35	No. 45 (Cont.)	No. 55 (Cont.)	No. 057	No. 75	No. 88
A-1.....\$0.02½	A-1.....\$0.04½	M-5.....\$0.07½	A-1.....\$0.04½	G-26.....\$0.06	D-5.....\$0.17	A-1.....\$0.18
A-3.....0.03½	C-1.....0.04½	S-1.....0.04½	A-2.....0.06½	L-3.....0.05½	E-1.....10½	A-3.....22½
C-1.....0.03	E-1.....0.04	S-5.....0.07	A-3.....0.07½		F-2.....13½	D-5.....20
C-5.....0.04	K-1.....0.05½		A-11.....0.06	No. 57	G-1.....17	E-1.....19
D-3.....0.03½	S-1.....0.05		A-12.....0.06½		H-1.....10	F-2.....19½
E-1.....0.03½			A-14.....0.06½	A-1.....\$0.07½	H-2.....15½	G-1.....21½
G-1.....0.03½			A-104.....12½	C-1.....0.09	K-1.....11	G-6.....18½
H-2.....0.02½			C-1.....0.05	D-5.....10	R-1.....10	G-19.....20½
K-1.....0.03	A-1.....\$0.04	No. 1.....\$0.10	E-1.....0.07½	R-2.....10½	H-1.....	H-1.....20
K-40.....0.07½	A-3.....0.07½	No. 2.....11	F-2.....11		H-2.....	H-2.....21
K-68.....0.07½	A-130.....0.05	No. 7.....16	D-3.....11½		K-1.....	K-1.....16½
M-1.....0.03	C-1.....0.04	No. 22.....11	D-5.....11½		A-1.....\$0.10½	M-3.....27½
R-26.....0.02	D-2.....0.05	No. 23.....11	K-1.....0.05	No. 062	A-113.....10½	R-1.....12½
R-49.....0.02½	E-1.....0.04½	No. 27.....13	R-2.....0.05½		C-1.....11½	R-8.....16
R-65.....0.02½	G-27.....0.06	No. 30.....12	G-26.....0.06½		D-5.....12½	
R-70.....0.03	K-1.....0.04½	No. 39.....14	G-27.....0.07	No. 77	E-1.....10	No. 80½
R-71.....0.02½	K-3.....0.08½		D-5.....0.09½		F-2.....14	
R-100.....0.02½	K-5.....0.05½				G-1.....12½	F-2.....\$0.25
R-103.....0.02½	K-6.....0.08				G-6.....13½	G-6.....26
R-104.....0.02½	K-45½.....0.14				H-1.....17½	K-1.....26
S-1.....0.03	S-1.....0.04½				H-2.....18	R-1.....19½
	S-3.....0.05½				K-1.....14	
No. 32						
A-1.....\$0.03	A-1.....\$0.04	A-1.....\$0.05	K-40.....0.06½	No. 62	A-1.....\$0.06½	A-4.....\$0.31
A-3.....0.03½	A-2.....0.05	H-33.....0.06½	K-45½.....0.13		A-2.....0.08	A-4 Couplers per pair.....\$1.20
A-12.....0.05½	A-3.....0.06½	K-3½.....0.10	K-52.....0.08½		A-3.....0.09½	
C-1.....0.03½	A-12.....0.06	L-32.....0.04½	K-91.....0.09		H-1.....14	A-11.....28½
D-3.....0.05½	A-14.....0.06		L-21.....0.05		H-2.....18	D-5.....40½
E-1.....0.02½	A-110.....0.06½		L-25.....0.05½		K-1.....14	A-11.....32½
G-1.....0.05	C-1.....0.05½		M-1.....0.07½		R-1.....10	No. 95
K-1.....0.03½	C-15.....0.06		G-27.....0.08		R-3.....11	
K-3.....0.06	K-15.....0.06		G-28.....0.11		F-2.....\$0.40½	
K-5.....0.04	K-22.....0.11		K-1.....0.07		K-2.....0.32½	
K-6.....0.06½	C-27.....0.07		S-1.....0.06			
M-1.....0.05½	C-37.....0.04½		S-5.....0.05½			
S-1.....0.04½	C-47.....0.09½					
No. 33						
A-1.....\$0.03	A-1.....\$0.04	A-1.....\$0.05	K-45.....0.19	No. 78	A-1.....\$0.16½	A-4.....\$0.31
C-1.....0.04	A-2.....0.05	H-39.....0.07½	KC.....0.17		A-3.....0.20½	A-4 Couplers per pair.....\$1.20
D-3.....0.06	A-12.....0.06	M-39.....0.10	M-17.....0.10½		A-7.....0.17	
E-1.....0.03	A-14.....0.06	S-1.....0.05	S-1.....0.06½		A-7.....per pair.....78	
G-1.....0.05	A-110.....0.06½				A-11.....14	A-11.....28½
K-1.....0.03½	C-1.....0.04½				D-5.....27	D-5.....40½
K-3.....0.06	C-15.....0.06				E-1.....15½	E-1.....32½
K-5.....0.04	K-22.....0.11				F-2.....17½	F-2.....32
K-6.....0.06½	C-27.....0.07				G-1.....19½	G-6.....35½
M-1.....0.05½	C-37.....0.04½				G-6.....17½	G-18.....35½
S-1.....0.04½	C-47.....0.09½				H-1.....17	H-1.....31
No. 34						
A-1.....\$0.03	G-1.....0.04	A-1.....\$0.05	H-2.....19	No. 108	H-2.....21½	H-2.....32
C-1.....0.04	G-27.....0.06	A-3.....0.05½	K-1.....19		H-2.....19	H-2.....32
D-3.....0.06	G-36.....0.06	D-3.....10	K-3.....14½		K-1.....14½	K-1.....29
E-1.....0.03	H-2.....0.07	D-5.....0.08	M-3.....23		K-3.....23	K-1.....30½
K-1.....0.04	I-44.....0.06	E-1.....0.06	M-3.....20½		K-2.....20½	K-2.....35½
K-3.....0.07	K-1.....0.06	F-2.....0.06½	R-1.....11		M-3.....35½	M-3.....35½
K-5.....0.05	K-15.....0.07	A-12.....0.07			R-3.....31½	R-3.....31½
K-6.....0.06½	K-1 Couplers per pair.....39	K-1.....0.05				
M-1.....0.04½	K-3.....0.08½	K-1.....0.10				
S-1.....0.04	K-5.....0.05½	K-9.....0.06				
	K-40.....0.07	K-50.....0.29				
No. 35						
A-1.....\$0.03	G-1.....0.04	B-14.....12½	Z-44.....0.08	No. 67	No. 83	No. 108
C-1.....0.04	G-27.....0.06	C-1.....0.06				
D-3.....0.06	G-36.....0.06	D-3.....10				
E-1.....0.03	H-2.....0.07	D-5.....0.08				
K-1.....0.04	I-44.....0.06	E-1.....0.06				
K-3.....0.07	K-1.....0.06	F-2.....0.06½				
K-5.....0.05	K-15.....0.07	A-12.....0.07				
K-6.....0.06½	K-1 Couplers per pair.....39	K-1.....0.05				
M-1.....0.04½	K-3.....0.08½	K-1.....0.10				
S-1.....0.04	K-5.....0.05½	K-9.....0.06				
	K-40.....0.07	K-50.....0.29				
No. 36						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 55½	No. 67	No. 83	No. 108
C-1.....0.04	K-48.....0.08	No. 34.....0.27				
C-2.....0.05	K-91.....11½					
E-1.....0.03	L-2.....0.04½					
E-1 Couplers per pair..28	L-8.....0.09½					
K-1.....0.04	M-1.....0.07					
No. 37						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 55½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 38						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 39						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 40						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 41						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 42						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 43						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 44						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 45						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 46						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 47						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 48						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 49						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 50						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-1 Couplers per pair..28	L-23.....0.04½					
K-1.....0.04	M-1.....0.07					
No. 51						
A-1.....\$0.03	K-45½.....14½	No. 19.....\$0.13	No. 56½	No. 67	No. 83	No. 108
C-1.....0.04	K-91.....11½	No. 34.....0.27				
C-2.....0.05	L-2.....0.04½					
E-1.....0.03	L-8.....0.09½					
E-						

UNIVERSAL SHAFT BEARINGS

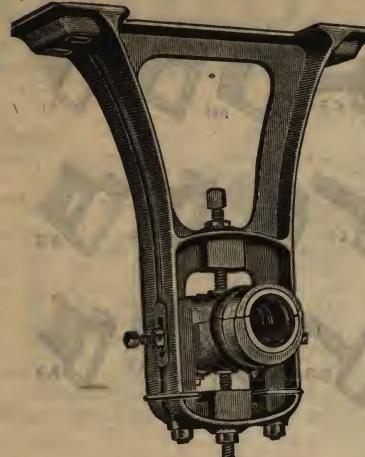
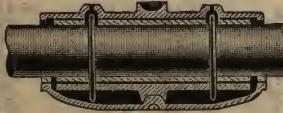


Fig. 60



Universal Ring Oiling
Bearings. Babbitted and Reamed.

78M132

RING OILING DROP HANGERS, FIG. 60

Size of Shaft, Inches	Net Price, 6 to 8 in. Drop	Net Price, 8 to 10 in. Drop	Net Price, 10 to 12 in. Drop	Net Price, 14 to 16 in. Drop	Net Price, 18 to 20 in. Drop	Net Price, 22 to 24 in. Drop
$\frac{1}{2}$	\$2.80	\$3.00	\$3.20	\$3.80	\$4.20	\$5.00
$1\frac{1}{8}$	3.60	3.80	4.00	4.60	5.20	6.00
$1\frac{1}{4}$	4.00	4.20	4.40	5.00	5.60	6.40
$1\frac{3}{8}$	4.80	5.00	5.20	5.80	6.20	6.80
$1\frac{5}{8}$	5.60	5.80	6.00	6.60	7.00	7.60
$2\frac{1}{8}$	7.00	7.40	7.60	8.40	9.00	9.80
$2\frac{1}{4}$	7.80	8.20	8.40	9.20	9.80	10.60
$2\frac{3}{8}$	9.20		10.80	12.00	13.60	14.80
$2\frac{5}{8}$	10.80			12.40	13.60	15.20
$3\frac{1}{8}$				16.00	18.00	20.00
$3\frac{3}{8}$				17.60	19.60	21.60
$3\frac{5}{8}$				20.80	22.80	25.20
$3\frac{7}{8}$				22.40	24.40	26.80
						28.40

78M134

PLAIN OILING DROP HANGERS, FIG. 60B

Size of Shaft, Inches	Net Price, 6 to 8 in. Drop	Net Price, 8 to 10 in. Drop	Net Price, 10 to 12 in. Drop	Net Price, 14 to 16 in. Drop	Net Price, 18 to 20 in. Drop	Net Price, 22 to 24 in. Drop
$\frac{1}{2}$	\$2.20	\$2.40	\$2.60	\$3.20	\$3.60	
$1\frac{1}{8}$	2.40	2.60	2.80	3.40	4.60	5.40
$1\frac{1}{4}$	3.00	3.20	3.40	4.00	5.20	6.00
$1\frac{3}{8}$	3.80	4.00	4.20	4.80	5.40	6.20
$1\frac{5}{8}$	4.20	4.40	4.60	5.20	5.80	6.60
$2\frac{1}{8}$	6.16	6.56	6.76	7.56	8.16	8.96
$2\frac{1}{4}$	6.88	7.28	7.48	8.28	8.88	9.68
$2\frac{3}{8}$	8.40	9.20	10.00	11.20	12.80	14.00
$2\frac{5}{8}$	9.60	10.40	11.20	12.40	14.00	15.20

We can furnish other sizes than listed—Write for Prices.

Be sure to mention whether Ring Oiling or Plain Oiling Bearings are desired.

All Prices Subject to Change Without Notice.

POST HANGERS

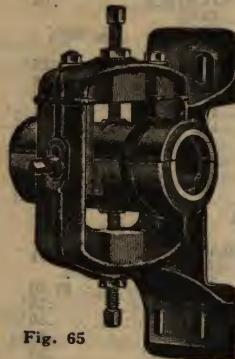


Fig. 65

PILLOW BLOCKS

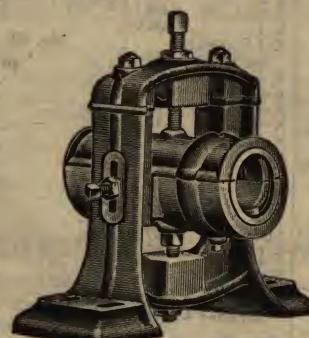


Fig. 70

BRACKET HANGERS

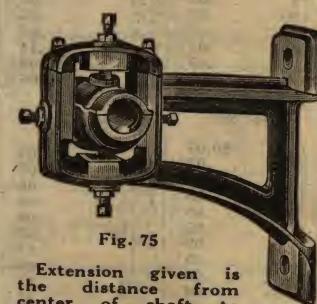


Fig. 75

Extension given is
the distance from
center of shaft to
base of hanger.

78M136 POST HANGERS.

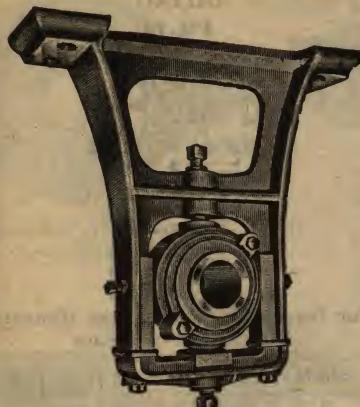
Fig. 65, Size	Net Price, Ring Oiling	Net Price, Plain Oiling	Fig. 70, Size	Net Price, Ring Oiling	Net Price, Plain Oiling	Fig. 75, Size	Extension In.	Net Price, Ring Oiling	Fig. 75, Size	Extension In.	Net Price, Ring Oiling
$\frac{1}{2}$	\$3.00	\$2.40	$\frac{1}{2}$	\$2.80	\$2.20	$1\frac{1}{8}$	10	\$4.00	$1\frac{1}{4}$	14	\$7.00
$1\frac{1}{8}$	3.80	2.60	$1\frac{1}{8}$	3.60	2.40	$1\frac{1}{8}$	12	4.40	$1\frac{1}{8}$	16	7.60
$1\frac{1}{4}$	4.20	3.20	$1\frac{1}{4}$	4.00	3.00	$1\frac{1}{4}$	14	4.80	$1\frac{1}{4}$	18	8.20
$1\frac{3}{8}$	4.80	4.00	$1\frac{3}{8}$	4.80	3.80	$1\frac{3}{8}$	16	5.20	$2\frac{1}{8}$	10	7.60
$1\frac{5}{8}$	5.60	4.40	$1\frac{5}{8}$	5.60	4.20	$1\frac{1}{4}$	10	4.40	$2\frac{1}{8}$	12	8.20
$2\frac{1}{8}$	7.40	6.56	$2\frac{1}{8}$	7.00	6.16	$2\frac{1}{8}$	12	4.80	$2\frac{1}{8}$	14	9.20
$2\frac{1}{4}$	8.20	7.28	$2\frac{1}{4}$	7.80	6.88	$2\frac{1}{4}$	14	5.20	$2\frac{1}{4}$	16	10.40
$2\frac{3}{8}$	10.80	10.00	$2\frac{3}{8}$	9.20	8.40	$2\frac{3}{8}$	16	5.60	$2\frac{3}{8}$	10	8.40
$2\frac{5}{8}$	12.40	11.20	$2\frac{5}{8}$	10.80	9.60	$1\frac{1}{4}$	10	5.20	$2\frac{5}{8}$	12	9.00
$3\frac{1}{8}$	16.00		$3\frac{1}{8}$	15.20		$3\frac{1}{8}$	12	5.60	$3\frac{1}{8}$	14	10.00
$3\frac{3}{8}$	17.60		$3\frac{3}{8}$	16.80		$3\frac{3}{8}$	14	6.20	$3\frac{3}{8}$	16	11.20
$3\frac{5}{8}$	25.20		$3\frac{5}{8}$	21.20		$3\frac{5}{8}$	16	6.80	$2\frac{1}{4}$	10	12.00
$3\frac{7}{8}$	26.80		$3\frac{7}{8}$	22.80		$3\frac{7}{8}$	18	7.40	$2\frac{1}{4}$	12	13.20
$4\frac{1}{8}$	34.80		$4\frac{1}{8}$	28.80		$4\frac{1}{8}$	10	6.00	$4\frac{1}{8}$	14	12.00
$4\frac{5}{8}$	36.80		$4\frac{5}{8}$	31.20		$4\frac{5}{8}$	12	6.40	$4\frac{5}{8}$	16	14.40

We can furnish other sizes than listed—Write for Prices.

Be sure to mention whether Ring Oiling or Plain Oiling Bearings are desired.

For Dimensions of Hangers and Bearings, See page 120.

S-K-F BALL BEARING HANGERS



S-K-F Ball Bearing Drop Hanger. Fig. No. BB60

78M144

UNIVERSAL—SELF ALIGNING—DUST PROOF

Reduces Friction to the Minimum—Cuts Down Power Bills
The Most Efficient Equipment Known for Power Transmission

S-K-F DROP HANGERS

Fig. No. BB60
For Medium Duty

SIZES AND NET PRICES EACH

Size Shaft, Inches	6 to 8 Inch Drop	8 to 10 Inch Drop	11 to 13 Inch Drop	14 to 16 Inch Drop	16 to 18 Inch Drop	18 to 20 Inch Drop	22 to 24 Inch Drop
$\frac{1}{2}$	\$10.81	\$11.03	\$11.33	\$11.66	\$12.07	.....	.....
$1\frac{1}{16}$	12.79	13.17	13.34	13.89	14.44	15.15	.....
$1\frac{1}{8}$	15.07	15.46	15.59	16.17	16.72	17.44	.....
$1\frac{1}{4}$	16.50	17.00	17.22	17.74	18.59	18.95	20.32
$1\frac{1}{2}$	18.73	19.25	19.47	19.99	20.82	21.20	22.55
$2\frac{1}{16}$	.....	23.65	23.76	24.59	.....	26.32	27.50
$2\frac{1}{8}$	.....	27.75	27.86	28.68	.....	30.42	31.60
$2\frac{1}{4}$	.....	32.73	34.05	35.53	.....	37.46	39.44
$2\frac{1}{2}$	.....	37.46	38.80	40.26	.....	42.12	44.19

Other Sizes Furnished—Prices on Application

S-K-F POST HANGERS

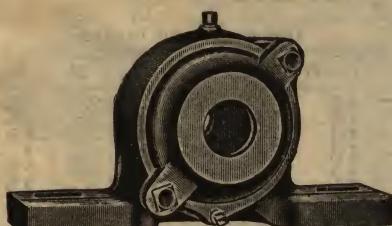
For Medium Duty
Fig. No. BB65

78M146

SIZES AND NET PRICES

Size of Shaft Inches	$1\frac{1}{16}$	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Extension, Inches.....	7"	7"	7"	7"
Net Price, Each.....	\$13.48	\$15.76	\$17.63	\$19.88
Size of Shaft Inches	$2\frac{1}{16}$	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{1}{2}$
Extension, Inches.....	$8\frac{5}{8}$ "	$8\frac{5}{8}$ "	$9\frac{1}{8}$ "	$9\frac{1}{8}$ "
Net Price, Each.....	\$24.28	\$28.38	\$34.49	\$39.24

Other Sizes Furnished—Prices on Application
Hangers for Severe Duty—Prices on Application



Showing Fig. No. BB90
Rigid S-K-F Ball Bearing
Pillow Block

When kind of Pillow Block is not stated in
order we always ship same as shown in this
illustration.

S-K-F PILLOW BLOCKS

For Medium Service—Rigid and Adjustable
78M148 SIZES AND NET PRICES

Size of Shaft Inches	Rigid Fig. No. BB90	Adjustable Pedestal Fig. No. BB70
$1\frac{1}{16}$	\$11.11	\$12.08
$1\frac{1}{8}$	13.81	14.77
$1\frac{1}{4}$	14.96	16.09
$1\frac{1}{2}$	17.55	18.92
$2\frac{1}{16}$	21.32	22.55
$2\frac{1}{8}$	25.63	27.48
$2\frac{1}{4}$	29.40	31.74
2	34.54	37.57

Other Sizes Furnished—Prices on Application

S-K-F Ball
Bearings are
Self-Aligning.
They will
deliver the
maximum of
power with
the least
friction loss.



"BAR-NUN" BALL-BEARING GREASE

It is absolutely necessary that ball bearings, roller bearings, etc., be lubricated with a non-gumming, non-resisting light grease.

In "BAR-NUN" Grease we have the ideal and only grease that satisfactorily fills the bill. Ball bearings should be repacked with "Bar-Nun" Grease every 30 to 120 days, depending on the amount of service.

78M156—In 5 pound pails. Price each, net..... \$1.00

78M158—In 10 pound pails. Price each, net..... 1.85

78M160—In 25 pound pails. Price each, net..... 4.25

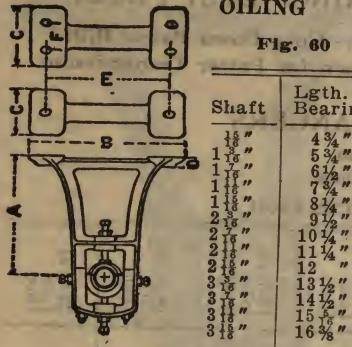


ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Dimensions of Gump's Shaft Bearings

SHAFT HANGERS, RING-OILING

Fig. 60



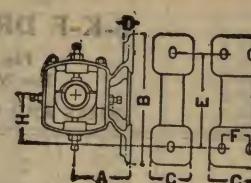
Dimensions in Inches

Shaft	A	B	C	D	E	F
1 $\frac{1}{8}$	6	8	11 $\frac{1}{2}$	3 $\frac{1}{4}$	7 $\frac{1}{2}$	8 $\frac{3}{4}$
8-10	12	3 $\frac{1}{2}$	7 $\frac{1}{2}$	9 $\frac{1}{2}$...	
10-12	13 $\frac{3}{4}$	4	7 $\frac{1}{2}$	10 $\frac{1}{4}$...	
14-16	16	4	7 $\frac{1}{2}$	12 $\frac{1}{2}$...	
18-20	18	4	7 $\frac{1}{2}$	14 $\frac{1}{4}$...	
22-24	20 $\frac{5}{8}$	4	7 $\frac{1}{2}$	17 $\frac{1}{2}$...	
1 $\frac{1}{8}$	6	8	13	4 $\frac{1}{8}$	1 $\frac{1}{8}$	9 $\frac{1}{2}$
8-10	10	4 $\frac{1}{8}$	1 $\frac{1}{8}$	9 $\frac{1}{2}$...	
10-12	14 $\frac{3}{4}$	4 $\frac{1}{8}$	1 $\frac{1}{8}$	10 $\frac{1}{4}$...	
14-16	17	4 $\frac{1}{8}$	1 $\frac{1}{8}$	13 $\frac{1}{2}$...	
18-20	19	5	1 $\frac{1}{8}$	15 $\frac{1}{4}$...	
22-24	21 $\frac{1}{2}$	5	1 $\frac{1}{8}$	19 $\frac{1}{2}$...	

POST HANGERS, RING-OILING

Fig. 65

For length of Bearings, see Hangers



Dimensions in Inches

Shaft	A	B	C	D	E	F
1 $\frac{1}{8}$	6	8	11 $\frac{1}{2}$	3 $\frac{1}{4}$	7 $\frac{1}{2}$	8 $\frac{3}{4}$
8-10	12	3 $\frac{1}{2}$	7 $\frac{1}{2}$	9 $\frac{1}{2}$...	
10-12	13 $\frac{3}{4}$	4	7 $\frac{1}{2}$	10 $\frac{1}{4}$...	
14-16	16	4	7 $\frac{1}{2}$	12 $\frac{1}{2}$...	
18-20	18	4	7 $\frac{1}{2}$	14 $\frac{1}{4}$...	
22-24	20 $\frac{5}{8}$	4	7 $\frac{1}{2}$	17 $\frac{1}{2}$...	
1 $\frac{1}{8}$	6	8	13	4 $\frac{1}{8}$	1 $\frac{1}{8}$	9 $\frac{1}{2}$
8-10	10	4 $\frac{1}{8}$	1 $\frac{1}{8}$	9 $\frac{1}{2}$...	
10-12	14 $\frac{3}{4}$	4 $\frac{1}{8}$	1 $\frac{1}{8}$	10 $\frac{1}{4}$...	
14-16	17	4 $\frac{1}{8}$	1 $\frac{1}{8}$	13 $\frac{1}{2}$...	
18-20	19	5	1 $\frac{1}{8}$	15 $\frac{1}{4}$...	
22-24	21 $\frac{1}{2}$	5	1 $\frac{1}{8}$	19 $\frac{1}{2}$...	

Shaft	A	B	C	D	E	F
1 $\frac{1}{8}$	6	8	14 $\frac{1}{4}$	4 $\frac{1}{8}$	1 $\frac{1}{8}$	10 $\frac{1}{4}$
8-10	10	5	1 $\frac{1}{8}$	12 $\frac{1}{4}$...	
10-12	16 $\frac{1}{2}$	4 $\frac{1}{8}$	1 $\frac{1}{8}$	12 $\frac{1}{4}$...	
14-16	18	4 $\frac{1}{8}$	1 $\frac{1}{8}$	13 $\frac{1}{2}$...	
18-20	20	5	1 $\frac{1}{8}$	15 $\frac{1}{4}$...	
22-24	22	5 $\frac{1}{4}$	1 $\frac{1}{8}$	18 $\frac{1}{2}$...	

Shaft	A	B	C	D	E	F
2 $\frac{1}{8}$	6	8	15	4 $\frac{1}{8}$	1 $\frac{1}{8}$	10 $\frac{1}{4}$
&	8-10	17	5	1 $\frac{1}{8}$	12 $\frac{1}{4}$	...
10-12	18 $\frac{1}{2}$	5 $\frac{1}{2}$	1 $\frac{1}{8}$	13 $\frac{1}{2}$...	
14-16	20 $\frac{1}{2}$	5 $\frac{3}{4}$	1 $\frac{1}{8}$	15 $\frac{3}{4}$...	
18-20	22 $\frac{1}{2}$	6	1 $\frac{1}{8}$	18	...	
22-24	24 $\frac{1}{2}$	6	1 $\frac{1}{8}$	20	...	

Shaft	A	B	C	D	E	F
2 $\frac{1}{8}$	6	8	18 $\frac{1}{4}$	6	1 $\frac{1}{8}$	14
&	10-12	18 $\frac{1}{2}$	6	1 $\frac{1}{8}$	14	...
14-16	21	6 $\frac{1}{2}$	1 $\frac{1}{8}$	16 $\frac{1}{4}$...	
18-20	23	7	1 $\frac{1}{8}$	18 $\frac{3}{8}$...	
22-24	25 $\frac{1}{4}$	7	1 $\frac{1}{8}$	20 $\frac{7}{8}$...	

Shaft	A	B	C	D	E	F
2 $\frac{1}{8}$	6	8	18 $\frac{1}{4}$	6	1 $\frac{1}{8}$	14
&	10-12	18 $\frac{1}{2}$	6	1 $\frac{1}{8}$	14	...
14-16	21	6 $\frac{1}{2}$	1 $\frac{1}{8}$	16 $\frac{1}{4}$...	
18-20	23	7	1 $\frac{1}{8}$	18 $\frac{3}{8}$...	
22-24	25 $\frac{1}{4}$	7	1 $\frac{1}{8}$	20 $\frac{7}{8}$...	

Shaft	A	B	C	D	E	F
3 $\frac{1}{8}$	10-12	22 $\frac{3}{8}$	8	1 $\frac{1}{8}$	17	3 $\frac{1}{2}$
&	14-16	23 $\frac{1}{2}$	8	1 $\frac{1}{8}$	18 $\frac{1}{2}$	3 $\frac{1}{2}$
3 $\frac{1}{8}$	18-20	26	8	1 $\frac{1}{8}$	20 $\frac{1}{2}$	3 $\frac{1}{2}$
22-24	28 $\frac{1}{2}$	10 $\frac{1}{2}$	1 $\frac{1}{8}$	22 $\frac{1}{2}$	4	

Shaft	A	B	C	D	E	F
3 $\frac{1}{8}$	10-12	23	9	1 $\frac{7}{8}$	17 $\frac{1}{4}$	4
&	14-16	24 $\frac{3}{4}$	9	1 $\frac{7}{8}$	18 $\frac{3}{4}$	4
3 $\frac{1}{8}$	18-20	26	9 $\frac{1}{2}$	1 $\frac{7}{8}$	20 $\frac{1}{2}$	4
22-24	28 $\frac{1}{2}$	10 $\frac{1}{2}$	1 $\frac{7}{8}$	22 $\frac{1}{2}$	4	

Shaft	A	B	C	D	E	F
3 $\frac{1}{8}$	10-12	23	9	1 $\frac{7}{8}$	17 $\frac{1}{4}$	4
&	14-16	24 $\frac{3}{4}$	9	1 $\frac{7}{8}$	18 $\frac{3}{4}$	4
3 $\frac{1}{8}$	18-20	26	9 $\frac{1}{2}$	1 $\frac{7}{8}$	20 $\frac{1}{2}$	4
22-24	28 $\frac{1}{2}$	10 $\frac{1}{2}$	1 $\frac{7}{8}$	22 $\frac{1}{2}$	4	

Shaft	A	B	C	D	E	F
3 $\frac{1}{8}$	10-12	23	9	1 $\frac{7}{8}$	17 $\frac{1}{4}$	4
&	14-16	24 $\frac{3}{4}$	9	1 $\frac{7}{8}$	18 $\frac{3}{4}$	4
3 $\frac{1}{8}$	18-20	26	9 $\frac{1}{2}$	1 $\frac{7}{8}$	20 $\frac{1}{2}$	4
22-24	28 $\frac{1}{2}$	10 $\frac{1}{2}$	1 $\frac{7}{8}$	22 $\frac{1}{2}$	4	

Shaft	A	B	C	D	E	F
3 $\frac{1}{8}$	10-12	23	9	1 $\frac{7}{8}$	17 $\frac{1}{4}$	4
&	14-16	24 $\frac{3}{4}$	9	1 $\frac{7}{8}$	18 $\frac{3}{4}$	4
3 $\frac{1}{8}$	18-20	26	9 $\frac{1}{2}$	1 $\frac{7}{8}$	20 $\frac{1}{2}$	4
22-24	28 $\frac{1}{2}$	10 $\frac{1}{2}$	1 $\frac{7}{8}$	22 $\frac{1}{2}$	4	

Shaft	A	B	C	D	E	F
3 $\frac{1}{8}$	10-12	23	9	1 $\frac{7}{8}$	17 $\frac{1}{4}$	4
&	14-16	24 $\frac{3}{4}$	9	1 $\frac{7}{8}$	18 $\frac{3}{4}$	4
3 $\frac{1}{8}$	18-20	26	9 $\frac{1}{2}$	1 $\frac{7}{8}$	20 $\frac{1}{2}$	4
22-24	28 $\frac{1}{2}$	10 $\frac{1}{2}$	1 $\frac{7}{8}$	22 $\frac{1}{2}$	4	

Shaft	A	B	C	D	E	F
3 $\frac{1}{8}$	10-12	23	9	1 $\frac{7}{8}$	17 $\frac{1}{4}$	4
&	14-16	24 $\frac{3}{4}$	9	1 $\frac{7}{8}$	18 $\frac{3}{4}$	4
3 $\frac{1}{8}$	18-20	26	9 $\frac{1}{2}$	1 $\frac{7}{8}$	20 $\frac{1}{2}$	4
22-24	28 $\frac{1}{2}$	10 $\frac{1}{2}$	1 $\frac{7}{8}$	22 $\frac{1}{2}$	4	

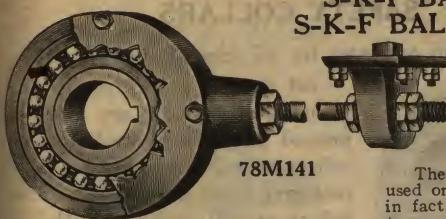
Shaft	A	B	C	D	E	F
3 $\frac{1}{8}$	10-12	23	9	1 $\frac{7}{8}$	17 $\frac{1}{4}$	4
&	14-16	24 $\frac{3}{4}$	9	1 $\frac{7}{8}$	18 $\frac{3}{4}$	4
3 $\frac{1}{8}$	18-20	26	9 $\frac{1}{2}$	1 $\frac{7}{8}$	20 $\frac{1}{2}$	4
22-24	28 $\frac{1}{2}$	10 $\frac{1}{2}$	1 $\frac{7}{8}$	22 $\frac{1}{2}$	4	

Shaft	A	B	C	D	E	F
3 $\frac{1}{8}$	10-12	23	9	1 $\frac{7}{8}$	17 $\frac{1}{4}$	4
&	14-16	24 $\frac{3}{4}$	9	1 $\frac{7}{8}$	18 $\frac{3}{4}$	4
3 $\frac{1}{8}$	18-20	26	9 $\frac{1}{2}$	1 $\frac{7}{8}$	20 $\frac{1}{2}$	4
22-24	28 $\frac{1}{2}$	10 $\frac{1}{2}$	1 $\frac{7}{8}$	22 $\frac{1}{2}$	4	

Shaft	A	B	C	D	E	F
3 $\frac{1}{8}$	10-12	23	9	1 $\frac{7}{8}$	17 $\frac{1}{4}$	4
&	14-16	24 $\frac{3}{4}$	9	1 $\frac{7}{8}$	18 $\frac{3}{4}</$	

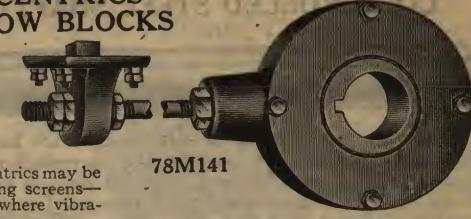
Eccentrics, Pillow Blocks and Bearings

S-K-F BALL BEARING ECCENTRICS S-K-F BALL BEARING PILLOW BLOCKS



Eccentric Housing Cut Away to Show Interior.

Shaft Sizes
From 15/16"
to 2-7/16" With
1/16" to 1/2"
Stroke.



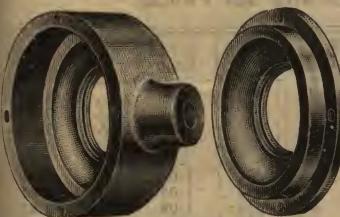
78M141

These S. K. F. Ball Bearing eccentrics may be used on feeders, shoes, sieves, cleaning screens—in fact, are adaptable to any work where vibratory motion is required.

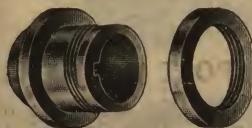
They are replacing the plain bearing eccentric boxes used on the older type of machines as there is little or no wear and an absolutely steady motion is maintained. The self-aligning S. K. F. ball bearings used are noiseless, as there is practically no wear. They are entirely enclosed in a dust proof housing and the grease and oil cannot leak out and drip on the floor or on the machinery. They require oiling but a few times a year and are the most satisfactory eccentrics made.

When ordering these bearings to replace the older type of eccentric boxes, give the caliperized diameter of shaft and the full length of travel the sieve is to have in each direction.

The eccentric rods are threaded. Furnished in any length to order, for which an extra charge is made. Lugs as illustrated furnished with each complete eccentric.



The Dust-Proof Housing which Completely Surrounds Bearing.



The Eccentric With Collars.

78M141 SIZES AND NET PRICES

Size Shaft	Net Price, Each	Size Shaft	Net Price, Each
15/16"	\$20.00	2 1/16"	\$33.50
1 1/8"	22.25	2 3/16"	40.00
1 1/4"	24.75	2 5/16"	45.00
1 1/2"	27.00	Intermediate Sizes Take Next Higher List	

The S. K. F. Ball Bearing Pillow Block may be placed in any position and can be used as a post box or a drop hanger as well as a pillow block. The same general description applies to both the eccentric and pillow block.

78M143 SIZES AND NET PRICES

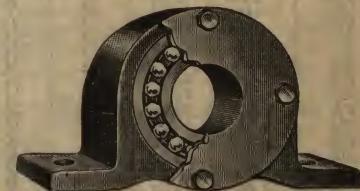
Size Shaft	Net Price, Each	Size Shaft	Net Price, Each
1 1/16"	\$14.25	2 3/16"	\$28.65
1 1/8"	17.95	2 5/16"	37.50
1 1/4"	22.00	2 11/16"	43.00
1 1/2"	23.50	2 13/16"	49.00

78M143 SIZES AND NET PRICES

Size Shaft	Net Price, Each	Size Shaft	Net Price, Each
1 1/16"	\$14.25	2 3/16"	\$28.65
1 1/8"	17.95	2 5/16"	37.50
1 1/4"	22.00	2 11/16"	43.00
1 1/2"	23.50	2 13/16"	49.00



The S-K-F Self-Aligning Ball Bearing.



78M143

The S-K-F Ball Bearing Dust-Proof Pillow Block.

SPECIAL ELEVATOR HEAD AND BOOT BEARINGS

ELEVATOR HEAD AND BOOT BEARINGS Either Babbitted or Ball Bearing

To use these bearings it is only necessary to screw them to the sides of the elevator head or boot. Vertically adjustable $\frac{1}{2}$ inch. Either plain babbitted or ball bearings.

SIZES AND NET PRICES



78M145P

Size Shaft	Net Price, Each	
	Plain Bearing 78M145P	Ball Bearings 78M145B
3/4"	\$1.35	\$2.25
1 1/16"	1.50	2.50
1 1/8"	1.60	2.75
1 1/4"	1.75	3.00
1 1/2"	1.90	3.25
1 1/2 1/16"	2.25	3.50

With S-K-F Ball Bearings



78M149B

Ball Bearing Bracket Bearings

SIZES AND NET PRICES

Size Shaft	Net Price, Each	
	Plain Bearing 78M147P	Ball Bearings 78M147B
3/4"	\$3.25	\$5.00
1 1/16"	3.50	5.25
1 1/8"	3.75	5.50
1 1/4"	4.00	5.75
1 1/2"	4.25	6.00
1 1/2 1/16"	4.50	6.25

BRACKET BEARINGS

For Elevator Heads and Roller Mill Feeders

These bearings are used where a clearance for a small pulley, eccentric, or dust guard is required. Clearance between inside of bearing and support $2\frac{1}{8}$ inches. Distance from center of shaft to upper edge of bracket arm $2\frac{1}{4}$ inches.

SIZES AND NET PRICES

Size Shaft	Net Price, Each	
	Plain Bearings 78M149P	S-K-F Ball Bearings 78M149B
3/4"	\$3.00	\$9.00
1 1/16"	3.50	11.00

Intermediate Sizes Take Next Higher List.

Plain Babbitted Bearings



78M149P

Plain Bearing Bracket Bearings

OUR ENGINEERING DEPARTMENT IS AT YOUR SERVICE

For information regarding any kind or form of conveying or elevating contrivance or regarding equipment of Elevators, Flour or Feed Mills, such as Rearranging machinery, Reflowing Mills, Corrugation of Rolls to suit product, or for recommending machinery which can be used to the best advantage at the least expense.

We are prepared to furnish the required machinery and all transmission connections for Small Corn, Rye, Flour or Feed Mills of 20 to 50 barrels capacity, short system, of either Roller Mill or Buhr Stone reduction with Sifter (including plans for erecting and flow sheet) at one-third less than the cost of new. ALL MACHINERY REBUILT AND GUARANTEED FOR ALL PRACTICAL USE AS GOOD AS NEW

STEEL SHAFTING, COLLARS AND POST HANGERS

COLD ROLLED STEEL SHAFTING

Only the best quality of soft steel, which has a great torsional resistance, is used in the manufacture of our shafting. This is rolled by a patented process which produces shafting that is straight and true, having a perfectly smooth polished surface, and mathematically accurate as to size.

Prices Given Are Subject to Change Without Notice
78M126 **SIZES AND NET PRICES.**

Diam. of Shaft Inches	Price per foot	Weight per foot pounds	Width of Stand- ard Key Seat	Depth of Stand- ard Key Seat	Approximate Horsepower at 100 R. P. M.
1 $\frac{1}{8}$	\$0.13	2.35	$1 \frac{1}{4}$	$1 \frac{1}{8}$	1.
1	.15	2.67	$1 \frac{1}{4}$	$1 \frac{1}{4}$	.4
1 $\frac{1}{8}$	.20	3.77	$1 \frac{1}{8}$	$5 \frac{1}{32}$	2.4
1 $\frac{1}{4}$	.23	4.17	$1 \frac{1}{8}$	$5 \frac{1}{32}$	2.7
1 $\frac{1}{8}$	.27	4.60	$1 \frac{1}{8}$	$5 \frac{1}{32}$	3.2
1 $\frac{1}{8}$	.29	5.05	$1 \frac{1}{8}$	$5 \frac{1}{32}$	3.7
1 $\frac{1}{8}$	.30	5.52	$1 \frac{1}{8}$	$1 \frac{1}{8}$	4.3
1 $\frac{1}{8}$	.32	6.01	$1 \frac{1}{8}$	$1 \frac{1}{8}$	4.8
1 $\frac{1}{8}$	.39	7.05	$1 \frac{1}{8}$	$1 \frac{1}{8}$	6.1
1 $\frac{1}{8}$	.40	7.60	$1 \frac{1}{8}$	$1 \frac{1}{8}$	6.7
1 $\frac{1}{8}$	.46	8.18	$1 \frac{1}{8}$	$1 \frac{1}{8}$	7.6
1 $\frac{1}{8}$	.53	10.02	$1 \frac{1}{8}$	$1 \frac{1}{8}$	10.4
2	.57	10.68	$1 \frac{1}{8}$	$1 \frac{1}{8}$	11.4
2 $\frac{1}{8}$	.68	12.06	$1 \frac{1}{8}$	$1 \frac{1}{8}$	13.8
2 $\frac{1}{8}$	.69	12.78	$1 \frac{1}{8}$	$1 \frac{1}{8}$	15.
2 $\frac{1}{8}$	.74	13.52	$1 \frac{1}{8}$	$1 \frac{1}{8}$	16.3
2 $\frac{1}{8}$	.79	14.28	$1 \frac{1}{8}$	$1 \frac{1}{8}$	17.6
2 $\frac{1}{8}$	.83	15.06	$1 \frac{1}{8}$	$1 \frac{1}{8}$	19.
2 $\frac{1}{8}$	.84	15.87	$1 \frac{1}{8}$	$1 \frac{1}{8}$	20.
2 $\frac{1}{8}$	.91	16.69	$1 \frac{1}{8}$	$1 \frac{1}{8}$	22.3
2 $\frac{1}{8}$	1.00	18.40	$1 \frac{1}{8}$	$1 \frac{1}{8}$	26.
2 $\frac{1}{8}$	1.05	19.29	$1 \frac{1}{8}$	$1 \frac{1}{8}$	28.
2 $\frac{1}{8}$	1.10	20.20	$1 \frac{1}{8}$	$1 \frac{1}{8}$	30.
2 $\frac{1}{8}$	1.22	22.07	$1 \frac{1}{8}$	$1 \frac{1}{8}$	34.
2 $\frac{1}{8}$	1.30	23.04	$1 \frac{1}{8}$	$1 \frac{1}{8}$	36.
3	1.35	24.08	$1 \frac{1}{8}$	$1 \frac{1}{8}$	39.
3 $\frac{1}{8}$	1.56	27.13	$1 \frac{1}{8}$	$1 \frac{1}{8}$	46.
3 $\frac{1}{8}$	1.62	28.21	$1 \frac{1}{8}$	$1 \frac{1}{8}$	48.
3 $\frac{1}{8}$	1.80	31.55	$1 \frac{1}{8}$	$1 \frac{1}{8}$	58.
3 $\frac{1}{8}$	1.96	32.71	$1 \frac{1}{8}$	$1 \frac{1}{8}$	40.
3 $\frac{1}{8}$	2.15	36.31	$1 \frac{1}{8}$	$1 \frac{1}{8}$	50.
3 $\frac{1}{8}$	2.25	37.55	$1 \frac{1}{8}$	$1 \frac{1}{8}$	53.
3 $\frac{1}{8}$	2.40	40.10	$1 \frac{1}{8}$	$1 \frac{1}{8}$	58.
4 $\frac{1}{8}$	2.45	41.40	$1 \frac{1}{8}$	$1 \frac{1}{8}$	61.
4	2.75	42.73	$1 \frac{1}{8}$	$1 \frac{1}{8}$	64.
4 $\frac{1}{8}$	3.00	46.83	$1 \frac{1}{8}$	$1 \frac{1}{8}$	74.
4 $\frac{1}{8}$	3.40	52.58	$1 \frac{1}{8}$	$1 \frac{1}{8}$	88.
4 $\frac{1}{8}$	3.85	58.68	$1 \frac{1}{8}$	$1 \frac{1}{8}$	98.
4 $\frac{1}{8}$	4.40	65.10	$1 \frac{1}{8}$	$1 \frac{1}{8}$	120.
5	4.80	66.76	$1 \frac{1}{8}$	$1 \frac{1}{8}$	125.

H. P. as Main Shafts. H. P. as Line Shafts.

Standard Sizes are in heavy type and suggest that they be used whenever possible.

Above Prices are for Standard Lengths only, as 6'-8'-10'-12'-16'-18'-20'-22' and 24' long.

For intermediate lengths add 10% to price per foot.

Less than 6 foot lengths add 20% to price per foot.

For other sizes than listed and lengths over 24 feet long—prices on application.

Key-Seating when desired will be charged for, at our regular rate.

Boxing shafts for shipment when wanted will be charged at fifty cents per 100 lbs. extra.

Minimum net charge for less than 100 lbs., 50 cents.

NET PRICES--STANDARD KEY SEATING

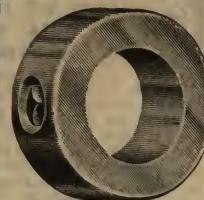
Diameter of Shaft	For Coupling per End Milled Ends	MIDDLE SPLINE			
		First Foot or Less Milled Ends	Second Foot or Over, per Foot	Extra for Each Drilled End	Extra for Each Square End
1 $\frac{1}{8}$-$1 \frac{1}{4}$	\$0.40	\$0.70	\$0.25	\$0.60	\$0.75
1 $\frac{1}{8}$-$2 \frac{1}{8}$	.50	.80	.30	.75	.90
2 $\frac{1}{8}$-$2 \frac{1}{8}$	.60	.90	.40	.90	1.00
2 $\frac{1}{8}$-$3 \frac{1}{8}$	.80	1.00	.50	1.00	1.20
3 $\frac{1}{8}$-$3 \frac{1}{8}$	1.00	1.30	.60	1.20	1.65
3 $\frac{1}{8}$-$4 \frac{1}{4}$	1.20	1.50	.70	1.35	1.80
4 $\frac{1}{8}$-$4 \frac{1}{4}$	1.40	1.70	.90	1.50	1.95

Milled ends furnished unless otherwise specified.

Each Key-Seat is priced as a separate one.

SAFETY COLLARS

Made solid and split for all sizes of shafting.



All sizes of collars up to and inclusive of $2 \frac{1}{16}$ inch are made of pressed cold rolled steel and all collars over $2 \frac{1}{16}$ inch are made of cast iron, faced on one side. Our collars are all equipped with the counter-sunk set screws—complying with the state laws for safeguarding workmen.

78M128

SIZES AND NET PRICES

Size	Price Each	Size	Price Each	Size	Price Each	Size	Price Each
$1 \frac{1}{8}$	\$0.22	$1 \frac{1}{8}$	\$0.47	$2 \frac{1}{8}$	\$0.84	$4 \frac{1}{8}$	\$1.40
1	.23	$1 \frac{1}{8}$	.49	3	.87	$4 \frac{1}{8}$	1.45
$1 \frac{1}{8}$	.26	2	.51	$3 \frac{1}{8}$	.92	$4 \frac{1}{8}$	1.55
$1 \frac{1}{8}$	.28	$2 \frac{1}{8}$	.54	$3 \frac{1}{8}$	.95	$4 \frac{1}{8}$	1.60
$1 \frac{1}{8}$	.30	$2 \frac{1}{8}$	.56	$3 \frac{1}{8}$	.97	$4 \frac{1}{8}$	1.65
$1 \frac{1}{8}$	.32	$2 \frac{1}{8}$	.58	$3 \frac{1}{8}$	1.02	$4 \frac{1}{8}$	1.86
$1 \frac{1}{8}$	.33	$2 \frac{1}{8}$	.61	$3 \frac{1}{8}$	1.05	$4 \frac{1}{8}$	2.01
$1 \frac{1}{8}$	.35	$2 \frac{1}{8}$	.63	$3 \frac{1}{8}$	1.08	$4 \frac{1}{8}$	2.07
$1 \frac{1}{8}$	.37	$2 \frac{1}{8}$	.66	$3 \frac{1}{8}$	1.13	$5 \frac{1}{8}$	2.29
$1 \frac{1}{8}$	.39	$2 \frac{1}{8}$	.71	$3 \frac{1}{8}$	1.16	$5 \frac{1}{8}$	2.35
$1 \frac{1}{8}$	.40	$2 \frac{1}{8}$	.74	$3 \frac{1}{8}$	1.18	$5 \frac{1}{8}$	2.46
$1 \frac{1}{8}$	.42	$2 \frac{1}{8}$	.76	$3 \frac{1}{8}$	1.21	$5 \frac{1}{8}$	2.52
$1 \frac{1}{8}$	.44	$2 \frac{1}{8}$	.79	$3 \frac{1}{8}$	1.23	$5 \frac{1}{8}$	2.77
$1 \frac{1}{8}$	.46	$2 \frac{1}{8}$	.81	$3 \frac{1}{8}$	1.26	$5 \frac{1}{8}$	3.01

For price on Split Collars add 50% to the net price each



POST HANGERS

Adjustable with plain oiling bearings. Used for Reels Line-Shafts, Counter-Shafts, Etc.

SIZES AND NET PRICES

78M130

Size Shaft Inches	Net Price Each	Size Shaft Inches	Net Price Each
$1 \frac{1}{8}$	\$2.25	$1 \frac{1}{4}$	\$3.00
1	2.30	$1 \frac{1}{4}$	3.40
$1 \frac{1}{8}$	2.35	$1 \frac{1}{4}$	3.75
$1 \frac{1}{4}$	2.40	$1 \frac{1}{8}$	4.00
$1 \frac{1}{4}$	2.60	$1 \frac{1}{8}$	4.10
$1 \frac{1}{8}$	2.80	$1 \frac{1}{8}$	4.25

Distance from wall to center on shaft of all sizes is 6 inches.

NET PRICES FOR FITTING KEY-SEATED PULLEYS, GEARS AND SHEAVES TO SHAFTING

Size of Shaft, Inches	FACE OF PULLEY, INCHES			
	3 to 6	7 to 9	10 to 12	13 to 16
$1 \frac{1}{8}$ to $1 \frac{1}{4}$	\$0.10	\$0.15	.....	.....
$1 \frac{1}{8}$ to $1 \frac{1}{4}$	1.25	1.35	.....	.....
$1 \frac{1}{8}$ to $2 \frac{1}{8}$	.15	.20	\$0.25	.....
$1 \frac{1}{8}$ to $2 \frac{1}{8}$	1.35	1.45	1.55	.....
$1 \frac{1}{8}$ to $2 \frac{1}{8}$	.20	.25	.30	\$0.35
$2 \frac{1}{8}$ to $2 \frac{1}{8}$	1.50	1.65	1.75	1.85
$2 \frac{1}{8}$ to $3 \frac{1}{4}$	.25	.30	.35	.40
$2 \frac{1}{8}$ to $3 \frac{1}{4}$	1.75	1.85	2.00	2.15
$3 \frac{1}{8}$ to $3 \frac{1}{8}$	.30	.35	.40	.45
$3 \frac{1}{8}$ to $3 \frac{1}{8}$	2.00	2.15	2.25	2.35
$3 \frac{1}{8}$ to $3 \frac{1}{8}$	.35	.40	.45	.50
$3 \frac{1}{8}$ to $4 \frac{1}{4}$	2.50	2.65	2.85	3.00
$3 \frac{1}{8}$ to $4 \frac{1}{4}$	.40	.45	.50	.55
$3 \frac{1}{8}$ to $4 \frac{1}{4}$	2.75	2.90	3.10	3.25

To the above should be added the prices of Pulley Gear or Sheave, Key-Seated.

PILLOW BLOCKS, POST HANGERS, Etc.

Rigid Pillow Blocks

Light Pattern

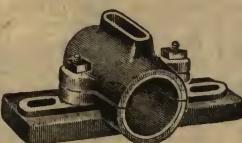


Fig. 85

With Split and Babbitted Bearings

78M162 Size and Net Prices

Size Shaft, Inches	Net Price Each	Size Shaft, Inches	Net Price, Each
$\frac{1}{4}$	\$0.55	$1\frac{1}{4}$	\$1.20
1	.60	$1\frac{1}{2}$	1.30
$1\frac{1}{8}$	.66	$1\frac{1}{8}$	1.50
$1\frac{1}{4}$	.70	$1\frac{1}{4}$	1.60
$1\frac{1}{2}$	.80	2	1.70
$1\frac{1}{4}$	.88	$2\frac{1}{4}$	2.20
$1\frac{1}{2}$	.95	$2\frac{1}{2}$	2.60
$1\frac{1}{4}$	1.10	$2\frac{1}{4}$	3.25

Rigid Pillow Blocks

Heavy Pattern



Fig. 90

With Split and Babbitted Bearings
PLAIN OILING AND RING OILING

78M168 Sizes and Net Prices

Size Shaft, Inches	Price Plain Oiling	Price Ring Oiling	Length Bearing P. O.	Length Bearing R. O.
$\frac{1}{4}$	\$0.81	\$2.80	$2\frac{1}{4}$ "	$4\frac{3}{4}$ "
$1\frac{1}{8}$	.98	3.00	$3\frac{1}{2}$ "	$5\frac{1}{2}$ "
$1\frac{1}{4}$	1.46	3.72	$4\frac{1}{2}$ "	$6\frac{1}{2}$ "
$1\frac{1}{2}$	1.79	4.20	$5\frac{1}{2}$ "	$7\frac{1}{2}$ "
$1\frac{1}{4}$	2.28	4.80	$5\frac{1}{2}$ "	$8\frac{1}{2}$ "
$2\frac{1}{4}$	2.60	5.60	$6\frac{1}{2}$ "	$9\frac{1}{2}$ "
$2\frac{1}{2}$	3.09	6.40	$7\frac{1}{2}$ "	$10\frac{1}{2}$ "
$2\frac{1}{2}$	3.90	7.40	$8\frac{1}{2}$ "	$11\frac{1}{2}$ "
$2\frac{1}{2}$	4.88	8.32	$8\frac{1}{2}$ "	12"
$3\frac{1}{4}$	6.18	9.60	$9\frac{1}{2}$ "	$13\frac{1}{2}$ "
$3\frac{1}{4}$	7.15	12.00	$10\frac{1}{2}$ "	$14\frac{1}{2}$ "
$3\frac{1}{4}$	8.45	14.40	$11\frac{1}{2}$ "	$15\frac{1}{2}$ "
$3\frac{1}{4}$	10.73	17.60	$11\frac{1}{2}$ "	$16\frac{1}{2}$ "
$4\frac{1}{4}$	11.70	21.20	$12\frac{1}{2}$ "	$17\frac{1}{2}$ "
$4\frac{1}{4}$	13.65	24.80	$13\frac{1}{2}$ "	$18\frac{1}{2}$ "

Intermediate sizes furnished at next higher price. Unless otherwise stated, Plain Oiling Boxes will be sent.

Rosette Bearings

Babbitted and Fitted with Grease Cups

Used for Conveyor Ends, Elevator Head and boot bearings, or any place where a side bearing is required.

Sizes and Net Prices

78M176

Size Shaft Inches	Net Price Each
$\frac{1}{2}$ to $\frac{7}{8}$	\$0.60
$\frac{1}{2}$ to $1\frac{1}{8}$	.70
$1\frac{1}{4}$ to $1\frac{1}{2}$	.90
$1\frac{1}{4}$ to $1\frac{1}{4}$	1.25



Angle Clamp Boxes

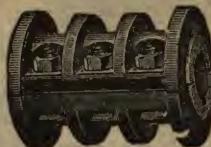
With Split Babbitted
Bearing Plain Oiling
Sizes and Net Prices

Fig. 105

78M164

Size Shaft Inch.	Net Price Each	Size Shaft Inch.	Net Price Each	Size Shaft Inch.	Net Price Each
$\frac{1}{4}$	\$0.95	$1\frac{1}{4}$	\$1.25	$1\frac{1}{2}$	\$1.65
1	1.05	$1\frac{1}{8}$	1.35	$1\frac{1}{4}$	1.80
$1\frac{1}{8}$	1.10	$1\frac{1}{4}$	1.40	$1\frac{1}{2}$	1.95
$1\frac{1}{4}$	1.20	$1\frac{1}{2}$	1.50	$1\frac{1}{4}$	2.25

Ribbed Compression Couplings



Clamp to shaft
with all the direct
force of bolts. Hold
shafts parallel can
be removed without
disturbing shaft.

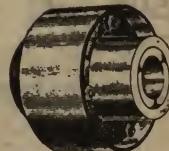
Fig. 130

78M166 Sizes and Net Prices

Size Shaft Inches	Extreme Length on Shaft	Outside Diam. of Coupling	Net Price Coupling
$1\frac{1}{4}$	6"	$4\frac{3}{4}$ "	\$3.90
$1\frac{1}{4}$	$6\frac{1}{2}$ "	$5\frac{1}{4}$ "	4.55
$1\frac{1}{4}$	$7\frac{1}{2}$ "	$5\frac{1}{2}$ "	5.53
$2\frac{1}{4}$	$8\frac{1}{2}$ "	$5\frac{1}{2}$ "	6.50
$2\frac{1}{4}$	$9\frac{1}{4}$ "	$6\frac{1}{2}$ "	7.15
$2\frac{1}{4}$	$9\frac{1}{4}$ "	$6\frac{1}{2}$ "	8.13
$2\frac{1}{4}$	$10\frac{1}{8}$ "	$7\frac{1}{2}$ "	9.75
$3\frac{1}{4}$	$10\frac{1}{8}$ "	$8\frac{1}{2}$ "	12.35
$3\frac{1}{4}$	13"	$8\frac{1}{2}$ "	13.98
$3\frac{1}{4}$	13"	$8\frac{1}{2}$ "	15.93
$3\frac{1}{4}$	13"	$8\frac{1}{2}$ "	18.20
$4\frac{1}{4}$	16"	$9\frac{1}{2}$ "	24.70

Note.—For fitting to shaft add to price of coupling cost of fitting pulley of same face as length of coupling. (See page 122).

Cinch Compression Couplings



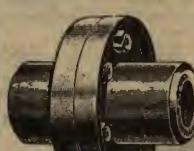
Strong, light in weight, tapering sleeve, grips shaft perfectly. Special bushings used for reducer couplings. For reducer couplings add 20% to list price of larger bore of coupling.

Fig. 135

78M172 Sizes and Net Prices

Size Shaft	Price Each	Size Shaft	Price Each
$1\frac{1}{4}$	\$3.80	$2\frac{1}{4}$	\$7.20
$1\frac{1}{4}$	4.40	$2\frac{1}{4}$	8.60
$1\frac{1}{4}$	5.00	$2\frac{1}{4}$	10.40
$1\frac{1}{4}$	6.40	$2\frac{1}{4}$	12.80

Flange or Plate Couplings



Finished all over, key-seated with keys.

For prices fitted to shafts see page 122.

Fig. 140

78M180 Sizes and Net Prices

Size Shaft	L'gth on Shaft	Price Each	Size Shaft	L'gth on Shaft	Price Each
$1\frac{1}{4}$	5"	\$5.10	$3\frac{1}{4}$ "	$9\frac{1}{4}$ "	\$15.60
$1\frac{1}{4}$	$5\frac{1}{4}$ "	5.40	$3\frac{1}{4}$ "	$9\frac{1}{2}$ "	17.10
$1\frac{1}{4}$	$5\frac{3}{4}$ "	6.30	$3\frac{1}{4}$ "	$10\frac{1}{2}$ "	20.10
$1\frac{1}{4}$	$6\frac{1}{4}$ "	6.90	$3\frac{1}{4}$ "	$10\frac{1}{2}$ "	21.60
$2\frac{1}{4}$	$6\frac{7}{8}$ "	7.80	$4\frac{1}{4}$ "	$11\frac{1}{8}$ "	29.40
$2\frac{1}{4}$	$7\frac{1}{2}$ "	8.70	$4\frac{1}{4}$ "	$11\frac{1}{8}$ "	37.80
$2\frac{1}{4}$	8"	10.50	$4\frac{1}{4}$ "	$12\frac{1}{2}$ "	40.80
$2\frac{1}{4}$	$8\frac{3}{4}$ "	12.90	$4\frac{1}{4}$ "	13"	45.00

For reducing couplings add 20% to net price of the larger size.



Solid Sleeve Couplings

For Light Transmission

Made of Cast Iron
with Countersunk Set
Screw.

Fig. 125 Sizes and Net Prices

Size of Shaft	Price Each	Size of Shaft	Price Each
$\frac{1}{2}$ to $\frac{7}{8}$	\$0.60	$1\frac{1}{4}$	\$2.28
$\frac{1}{2}$ to $1\frac{1}{8}$	.70	$1\frac{1}{4}$	2.60
$1\frac{1}{4}$ to $1\frac{1}{2}$	.90	$1\frac{1}{4}$	3.25
$1\frac{1}{4}$ to $1\frac{1}{4}$	1.25		

Take-Up Boxes, Gears, Jaw Couplings, etc.

Adjustable Take-Up Boxes

For use where it is necessary to take up slack in belts. Made to pull and push.



In ordering, give diameter of shaft and style of take-up.

The number of frame indicates length of movement in inches.

78M181 Sizes and Net Prices

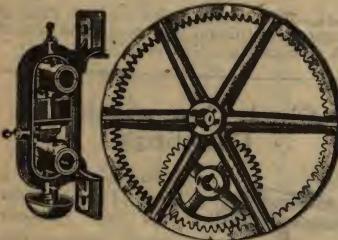
No.	Diam. Frame	Shaft	Length Bearing	Net Price Ea., Style "A" or "B"
4	1 1/8	2	\$5.60	
6	1 1/8	3	6.25	
8	1 1/8	4 1/2	7.65	
8	1 1/8	4 1/2	8.40	
9 1/2	1 1/8	5	9.75	
9 1/2	2 1/8	5	11.20	
13	2 1/8	5 1/2	12.40	
20	2 1/8	6	16.40	
20	2 1/8	6 1/2	19.75	

Fig. 200
Style A



Fig. 209
Style B

Double Swivel Post Boxes and Internal Spur Gears



The first illustration on the right shows a Double Post Box and the second Internal Spur Gears.

Internal Gears are used to reduce speed on elevator line shafts, when the line and driving shafts run in the same direction. Other sizes furnished. Prices on application.

78M182

Sizes and Net Prices

No.	No. of Teeth	Face	Pitch	Pitch Diam.	Proportion	Net Price per Pair
1	60	2 1/8"	1"	19.20"		
	20	2 1/8"	1"	6.40"	3.00 to 1	\$17.00
2	78	2 1/8"	1 1/8"	28.08"		
	33	2 1/8"	1 1/8"	11.88"	2.36 to 1	31.00
3	83	2 1/8"	1 1/8"	33.20"		
	36	2 1/8"	1 1/8"	14.40"	2.31 to 1	42.50

For all sizes of shaft up to and inclusive of 2 1/8 inches.

Double Swivel Post Boxes (Plain Oiling)

78M183

Sizes and Net Prices

Size for Internal Gear Number	For Sizes of Shaft Up to and Inc.	Center to Center of Bearings	Net Price, Each
1	2 1/8"	6 1/8"	\$15.00
2	2 1/8"	8 1/8"	20.00
3	2 1/8"	9 1/8"	25.00



Square Jaw

Jaw Clutches and Jaw Clutch Openings

Made with either spiral or square jaws. Spiral jaws either right or left-hand. Left-hand shown in cut. Pulleys, sprockets, or gears cast with clutch hubs when ordered.

State whether clutch or wheel is to drive and send sketch showing arrangement and direction shaft revolves. For reduction coupling, add 30% to price of largest bore. Furnished with yoke and collar. Levers furnished by customer.

78M190 Sizes and Net Prices

Size of Shaft on Shaft	Length Net Price per Pair	Size of Shaft on Shaft	Length Net Price per Pair
1 1/8"	7 1/4" \$9.70	2 1/8"	11 3/4" \$19.90
1 1/8"	8 1/8" 10.55	2 1/8"	12 3/4" 22.50
1 1/8"	8 1/8" 11.55	3 1/8"	13 1/4" 25.60
1 1/8"	9" 13.45	3 1/8"	15 1/4" 28.25
2 1/8"	9 3/4" 15.25	3 1/8"	15 1/4" 31.00
2 1/8"	10 1/8" 17.50	3 1/8"	16" 36.30



Spiral Jaw

Gears of All Kinds



We can furnish either iron or mortise Spur, Bevel or Mitre Gears.

Price on application.

Gump's Reel Gears

For Cross Shaft Drives Sizes and Net Prices

Pattern	Teeth	Pitch	Dia. Ins.	Face Ins.	Proportion	Price Each
35	112	1 1/8"	20.38	1 1/4"	7 to 1	\$9.50
16	16	1 1/8"	2.87	1 1/4"	7 to 1	1.75
D-30	82	3/4"	19.58	1 1/2"	5.4 to 1	\$8.25
D-31	15	3/4"	3.58	5.4 to 1		1.95
V-95	60	3/4"	14.33	1 3/4"	3 to 1	7.20
V-96	20	3/4"	4.78	1 3/4"	3 to 1	2.40
25	47	7/8"	13.10	2	2.46 to 1	6.40
20	19	7/8"	5.29	2	2.46 to 1	2.65
V-110	66	1"	21.02	2 1/4"	3 to 1	11.35
V-112	22	1"	7.01	2 1/4"	3 to 1	4.30

Hand Wheels

Made of Cast Iron, are Bored and Key seated or Set Screwed as ordered.

We can furnish these Wheels to fit a square shaft at an advance in price.

We also can furnish other sizes of hand wheels up to 36 inches in diameter. Prices on application.

78M184

Sizes and Net Prices

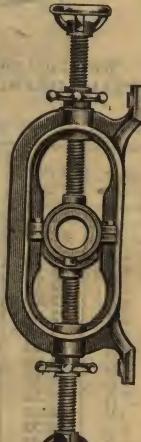
Extreme Diameter Inches	Diameter of Rim	Net Price, Each	Extreme Diameter Inches	Diameter of Rim	Net Price, Each
3	1/2"	\$1.00	12	1 1/8"	\$3.50
3 1/2	5/8"	1.25	14	1 1/4"	3.65
5	9/16"	1.45	16	1 1/4"	4.00
7	11/16"	2.20	18	1 1/8"	4.40
9	1"	2.55	20	1 1/8"	4.70
10	1 1/8"	3.00	24	1 1/8"	5.50

Special Take-Up Boxes

Extra Heavy Chain Oiling for Posts
Specially designed Post Hanger or Roller Mill Drives. Made Extra Heavy and strong with chain Oiling Bearing.

78M186 Sizes and Net Prices

Fig. 211



Light Take-Up Boxes



78M188 Price each, Net

1 1/8" inch.....	\$1.75
1 inch.....	1.95
1 1/8" inch.....	2.10

For Elevator Boots and for Light Conveyors. Length adjustment 3 inches.

Fig. 211



Adjustable Step-Bearings

With Oil Pot
Adjustable in every direction, with tempered steel button.

Fig. 110

When desired brass bushed an additional charge is made.

78M192 Sizes and Net Prices

Size Shaft, Inches	Net Price, Each	Size Shaft, Inches	Net Price, Each
1 1/8"	\$6.00	2 1/8"	\$13.00
1 1/8"	6.75	2 1/8"	16.00
		1 1/4"	20.00
		1 1/4"	22.80
		3 1/4"	26.20

Belt Tighteners, Idlers, Countershafts, etc.

Rack and Pinion Belt Tightener



To Operate
Either Vertically
or Horizontally,
For Wood Posts

Furnished
with cast iron
guides and ac-
curately balanced
pulley.

Rigid plain oiling
bearings.

78M1050

Dimensions and
Net Prices

No.	Length of Adjustment, Feet	Size of Pulley, Diam. Face	Diam. of Shaft	Net Price
00	1 1/2	12x 9	1 1/4	\$30.00
0	1 2/3	18x12	1 1/4	40.00
1	2	24x14	1 1/4	56.00
2	3 1/2	28x20	2 1/4	80.00
3	4	30x26	2 1/4	125.00

Swinging Belt Tightener



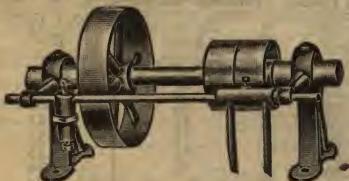
Sizes of Pulleys given are Standard, but may be varied to meet special requirements. Larger sizes furnished. Prices on application.

78M1054

Sizes and Net Prices

No.	Swing Feet	Size Pulley, Inches	Price Each
1	3	12x 8	\$30.00
2	3	12x10	35.00
3	4	20x14	40.00
4	4	24x16	45.00

Countershafts



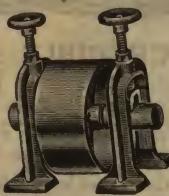
We list below complete counter-shafts for light work, and can furnish larger outfits on short notice and at reasonable prices.

78M1062 Sizes and Net Prices

Number.....	1	2	3	4
Diam. Shaft....	7/8"	1"	1 1/8"	1 1/4"
Length Shaft....	18"	20"	24"	30"
T. & L. Pulleys	4x1 3/4	5x2 1/4	6x3	6x4 1/2
Drive Pulley....	8x1 1/8	10x2 1/4	12x3	14x4
Drop....	6"	6"	7 1/2"	9"
Weight, Lbs....	25	36	60	85
Price, Each....	\$7.65	\$9.85	\$13.50	\$22.75

Note.—No. 4 Countershaft has vertical adjustment for boxes and babbitted bearings.

Adjustable Belt Idlers



Can be attached to ceiling or floor, or used in any position.

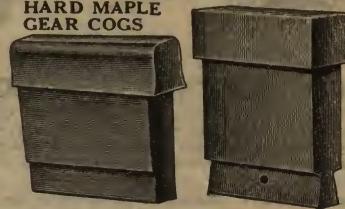
Bearings are adjustable, vertically, for 5 inches.

Made of cast iron throughout, with a machine-molded, machine-turned cast iron pulley in perfect balance.

78M1060 Sizes and Net Prices

No.	Size of Pulley	Net Price
7	10x4	\$16.50
8	10x5	17.50
9	10x6	18.50
10	12x6	19.50
11	12x7	20.50
12	12x8	22.50

HARD MAPLE GEAR COGS



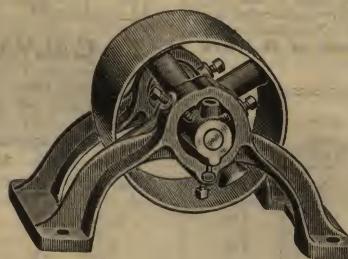
Made from Selected Winter sawed and lofted under cover, Wisconsin Hard or Rock maple. Will outlast any other material. Send old cog taken from largest slot for pattern, or a carefully made pattern. Do not send diagrams or measurements.

78M1066 Sizes and Net Prices

For Thickness up to 1 1/8 in.			For Thickness 2 to 3 in.		
Wd. F ce	Fin. Tooth	Sq. Tooth	Fin. Sq. Key	Tooth	Lghth Keys
4	\$0.26	\$0.20	\$0.32	\$0.28	6 \$.05
5	.28	.22	.33	.29	8 .06
6	.32	.24	.36	.32	12 .07
7	.36	.28	.42	.38	14 .08
8	.40	.32	.44	.40	16 .09
9	.50	.40	.52	.48	18 .10
10	.62	.50	.66	.62	20 .11
11	.74	.60	.78	.74	22 .11
12	.80	.72	.92	.88	22 .12

These prices are approximate. The exact charge depends on character of cog.

Belt Idlers



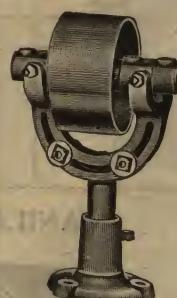
This Idler may be attached to the ceiling and used as a hanging jack or placed on the floor, the bearings being reversible.

Made of cast iron throughout, machined and neatly assembled.

78M1064 Sizes and Net Prices

No.	Size of Pulley	Net Price
1	10x 4	\$11.50
2	10x 5	12.50
3	12x 6	13.50
4	12x 7	14.50
5	14x 8	15.50
6	16x10	17.50

Adjustable Belt Idler



This Idler is adjustable either up down or at any angle.

Can be used above or below the floor. The bearings are self-aligning.

For upright Bran Dusters, Cleaners, Roller Mills etc., this idler can't be beat. Furnished with 8x6 in. Iron Pulley. The frame is made entirely of cast iron.

78M1065 Net Price

complete with Pulley ea. \$20.00

Swinging Tension Carriage

For 3/8 and 1-inch Rope, Price includes Yoke, Sheave and 100 lbs. of weights.

78M1052

Sizes and Net Prices of Sheave

16-inch.....	\$16.20
18-inch.....	18.00
20-inch.....	21.70
24-inch.....	22.50
30-inch.....	27.00
36-inch.....	31.50
40-inch.....	36.00

We also furnish Tension Carriages of all sizes and styles.

Chain Tighteners



For Wall or Post

Has slotted holes to allow considerable adjustment without changing position of bolts.

78M1056 Sizes and Net Prices

For No. 25 to 55 chain, inc., each	\$4.00
For No. 57 to 88 chain, inc., each	\$5.95
For No. 95 to 103 chain, inc., each	\$7.90

Flange Tighteners



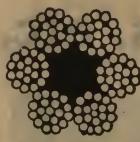
For Wall or Post

The same construction as tightener above, except it is finished with flange instead of a sprocket.

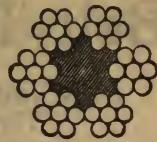
78M1057 Sizes and Net Prices

For No. 25 to 55 chain, inc., each	\$3.95
For No. 57 to 88 chain, inc., each	5.85
For No. 95 to 103 chain, inc., each	7.80

We Will Be Glad To Assist You
In Solving Any Transmission
Problem You have, if You Will
Write To Us.



WIRE ROPE



CRUCIBLE CAST STEEL HOISTING ROPE

This rope is applicable to a great variety of uses. It is particularly adapted for service in mines, for logging, on elevators, derricks, hay presses, dredges and inclined planes, cable ways, cargo and coal hoists, conveyors. Furnished with wire center at 10% extra.

Composed of 6 Strands of 19 Wires to the Strand, Hemp Center
78M1492 NET PRICES

Diameter, Inches	Net Price per Foot	Approximate Breaking Strain in Tons of 2,000 lbs.	Diameter Hemp Rope of Equal Strength	Allowable Working Strain in Tons of 2,000 lbs.	Average Weight per Foot	Minimum Size of Drums or Sheaves in Feet
$\frac{5}{8}$	\$0.08	4.8	1	1	0.22	$1\frac{1}{2}$
$\frac{15}{16}$	.08 $\frac{1}{2}$	6.5	$1\frac{1}{4}$	$1\frac{1}{4}$	0.30	$1\frac{1}{4}$
$\frac{1}{2}$	.09	8.4	$1\frac{1}{2}$	$1\frac{1}{2}$	0.39	2
$\frac{3}{4}$	.10	10.	$1\frac{1}{4}$	$2\frac{1}{4}$	0.50	$2\frac{1}{4}$
$\frac{5}{8}$	.12	12.5	$1\frac{1}{4}$	$2\frac{1}{4}$	0.62	$2\frac{1}{2}$
$\frac{3}{4}$	.16	17.5	$2\frac{1}{4}$	$3\frac{1}{4}$	0.89	3
$\frac{7}{8}$	.21	23.	$2\frac{1}{8}$	$5\frac{1}{4}$	1.20	$3\frac{1}{2}$
1	.26	30.	3	$6\frac{1}{4}$	1.58	4

SWEDES IRON HOISTING ROPE

The Swedish iron being soft, tough and pliable this rope is adaptable for any work where a pliable rope is essential. Recommended for elevator work or on pulleys smaller than standard. Furnished with wire center at 10% extra. Composed of 6 Strands of 19 Wires Each. Hemp Center.

78M1493 NET PRICES

Diameter, Inches	Net Price per Foot	Approximate Breaking Strain in Tons of 2,000 lbs.	Diameter Hemp Rope of Equal Strength	Allowable Working Strain in Tons of 2,000 lbs.	Average Weight per Foot	Minimum Size of Drums or Sheaves in Feet
$\frac{1}{4}$	\$0.06 $\frac{1}{2}$	1.1	$1\frac{1}{2}$	$1\frac{1}{4}$	0.10	$1\frac{1}{2}$
$\frac{5}{16}$	.06 $\frac{3}{4}$	1.5	$1\frac{1}{8}$	$1\frac{1}{8}$	0.15	2
$\frac{7}{16}$	.07	2.5	$1\frac{1}{8}$	$2\frac{1}{2}$	0.22	$2\frac{1}{4}$
$\frac{9}{16}$	.07 $\frac{1}{2}$	3.4	$1\frac{1}{8}$	7/10	0.30	$2\frac{1}{4}$
$\frac{1}{2}$	.08 $\frac{1}{2}$	4.	$1\frac{1}{8}$	9/10	0.39	3
$\frac{11}{16}$	.10	5.	$1\frac{1}{8}$	1	0.50	$3\frac{1}{2}$
$\frac{13}{16}$	.12	6.	$1\frac{1}{8}$	$1\frac{1}{4}$	0.62	4
$\frac{15}{16}$	.16	9.	$1\frac{1}{8}$	$1\frac{1}{8}$	0.89	$4\frac{1}{2}$
$\frac{17}{16}$	.20	13.	2	$2\frac{1}{2}$	1.20	$5\frac{1}{2}$
1	.26	17.	$2\frac{1}{4}$	$3\frac{1}{2}$	1.58	6

PLough STEEL HOISTING ROPE

Especially suitable for use on car pullers or as hoisting rope. The lay of the wires and of the strands are perfectly proportioned so that each wire gets the proper proportion of the load. Made with 6 strands of 19 wires each, with one hemp center.

78M1499 NET PRICES PER FOOT

Diam., Inches	Price Per Foot	Approx. Breaking Strain in Tons of 2,000 lbs.	Allowable Working Strain in Tons of 2,000 lbs.	Average Weight per Foot	Minimum Diameter of Drums in Feet
$\frac{1}{4}$	\$0.08 $\frac{1}{2}$	2.65	.53	.10	1.
$\frac{5}{16}$	.08 $\frac{3}{4}$	3.88	.76	.15	$1\frac{1}{2}$
$\frac{7}{16}$	.09	5.75	1.15	.22	1.50
$\frac{9}{16}$	.09 $\frac{1}{4}$	8.	1.6	.30	$1\frac{1}{2}$
$\frac{1}{2}$	.10	10.	2.	.39	2.
$\frac{11}{16}$	.11	12.3	2.4	.50	$2\frac{1}{2}$
$\frac{13}{16}$	.13	15.5	3.1	.62	2.5
$\frac{15}{16}$	.18	23.	4.6	.89	3.
$\frac{17}{16}$	.24	29.	5.8	1.20	3.5
1	.30	38.	7.6	1.58	4.
$1\frac{1}{8}$	.38	47.	9.4	2.	4.5
$1\frac{1}{4}$	.46	58.	12.	2.45	5.
$1\frac{3}{4}$	.55	72.	14.	3.	5.5
$1\frac{1}{2}$	.65	82.	16.	3.55	6.



SWIVEL SHACKLES

Galvanized—Drop Forged.
To keep car puller rope from twisting.
78M1489 Sizes and Net Prices

Size, Swivel, Inches	Length, Inches	Width Between Jaws, In	Price, Each
$\frac{3}{4}$	8	$1\frac{1}{8}$	\$6.00
$\frac{5}{8}$	9	$1\frac{1}{4}$	6.50
1	11	$1\frac{1}{2}$	7.00
$1\frac{1}{8}$	12	$1\frac{1}{8}$	7.50
$1\frac{1}{4}$	13 $\frac{1}{2}$	$1\frac{1}{4}$	8.00



SNATCH BLOCK

Plain Oiling
Wrought Iron
78M1890 Sizes and Net Prices.

Diam. Sheave	Diam. Rope	Price Each
12"	$5\frac{1}{2}$ "	\$15.00
14"	$5\frac{1}{2}$ "	17.00
16"	$5\frac{1}{2}$ "	22.00
18"	1"	32.00
20"	$1\frac{1}{8}$ "	45.00

CRUCIBLE STEEL TRANSMISSION AND HAULAGE ROPE

This rope is much stiffer than hoisting rope. Especially adapted for underground haulage in mines, incline planes or for deep well drilling. Will resist wear and give excellent service on such work. Furnished with wire center at 10% extra.

Composed of 6 Strands of 7 Wires to the Strand, Hemp Center.
78M1496 NET PRICES

Diameter, Inches	Net Price per Foot	Approximate Breaking Strain in Tons of 2,000 lbs.	Allowable Working Strain in Tons of 2,000 lbs.	Average Weight per Foot	Minimum Size of Drums or Sheaves in Feet
9/32	\$0.03 $\frac{1}{2}$	2.8	$1\frac{1}{2}$	0.12 $\frac{1}{2}$	$1\frac{1}{4}$
$\frac{1}{8}$	.04	3.4	$1\frac{1}{4}$	0.15	$2\frac{1}{4}$
$\frac{3}{16}$	.04 $\frac{1}{2}$	4.8	1	0.22	$2\frac{1}{4}$
$\frac{5}{16}$	.05 $\frac{1}{2}$	6.6	$1\frac{1}{4}$	0.30	3
$\frac{1}{2}$	.07	8.4	$1\frac{1}{4}$	0.39	$3\frac{1}{2}$
$\frac{7}{16}$	.08 $\frac{1}{2}$	10.	$2\frac{1}{4}$	0.50	4
$\frac{9}{16}$	.10	13.	$2\frac{1}{2}$	0.62	$4\frac{1}{2}$
$\frac{11}{16}$	.12	15.	3	0.75	$4\frac{1}{4}$
$\frac{13}{16}$	.14	18.	$3\frac{1}{4}$	0.89	5
$\frac{15}{16}$	.19	24.	$4\frac{1}{4}$	1.20	6
1	.24	32.	$6\frac{1}{2}$	1.58	7

GALVANIZED WIRE STRAND

Composed of 7 Steel Wires twisted into a single strand. For Smoke Stack Guys, Electric Light Plants, Street Railways, Signal Cord, Fencing and other Purposes.

78M1498 NET PRICES PER 100 FEET

Diameter, Inches	Net Price, per 100 Feet	Approximate Strength Pounds	Approximate Weight per 1,000 Feet
3/32	\$0.80	400	20
$1\frac{1}{8}$	1.00	500	32
$5\frac{1}{32}$	1.15	900	55
$1\frac{1}{16}$	1.25	1400	75
$1\frac{1}{8}$	1.75	2300	125
$1\frac{1}{4}$	2.75	3800	210
$1\frac{1}{8}$	3.50	5000	295
$1\frac{1}{16}$	4.50	6500	415
$1\frac{1}{8}$	5.50	8500	510
$1\frac{1}{4}$	8.50	11000	700

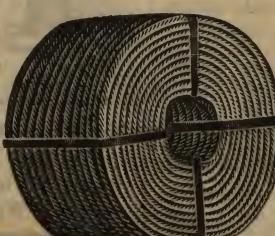


"CROSBY" WIRE ROPE CLIPS WIRE ROPE THIMBLES

78M1494 Sizes and Net Prices 78M1495 Galvanized, Ex. Heavy

Diameter, Rope	Net Price, Each	Diameter, Rope	Net Price, Each
$\frac{1}{4}$	\$0.30	$\frac{1}{4}$	\$0.08
$\frac{5}{16}$	.30	$\frac{5}{16}$	.08
$\frac{3}{8}$	.35	$\frac{3}{8}$	.09
$\frac{1}{2}$	.40	$\frac{1}{2}$	.11
$\frac{5}{16}$	.50	$\frac{5}{16}$	.13
$\frac{1}{4}$	.60	$\frac{1}{4}$	.15
$\frac{7}{16}$	.70	$\frac{7}{16}$	.16
1	.80	1	.20
$1\frac{1}{16}$	.90	$1\frac{1}{8}$	.25
$1\frac{1}{4}$	1.00	$1\frac{1}{4}$	.30

MANILA TRANSMISSION ROPE



We can supply Manila transmission rope in all sizes and for all purposes. This is the best quality transmission rope obtainable, being treated with a special composition of coating, which lubricates and waterproofs the rope as nearly as possible. Prices on Application

GUMP'S PACKING AND GASKETS

"Elco" Square Spiral Packing

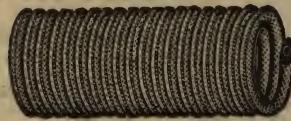


A good medium pressure packing. A combination of cotton duck, graphite and rubber, combining elasticity and good lubrication. Sizes $\frac{1}{4}$ to $\frac{3}{4}$ inch. Boxes contain 12 linear feet.

78E1830	Net Prices Per Box
$\frac{1}{4}$ -inch Size..	\$0.50
$\frac{3}{8}$ -inch Size..	.60
$\frac{1}{2}$ -inch Size..	1.50
$\frac{5}{8}$ -inch Size..	\$2.50

We do not sell less than one box—other sizes furnished up to $1\frac{1}{2}$ inch. Prices on application.

"Geneva" Round Red Core Spiral Piston Rod and Valve Stem Packing



For rods and valve stems of marine and stationary engines, air compressors, steam pumps, etc., adapted for low or high pressure, and slow or high speed. Put up in boxes containing 12 linear feet.

78E1842	Net Prices Per Box.
$\frac{1}{4}$ -inch Size..	\$1.50
$\frac{3}{8}$ -inch Size..	2.60
$\frac{1}{2}$ -inch Size..	3.50
$\frac{5}{8}$ -inch Size..	\$5.00

We do not sell less than one box—other sizes furnished up to $1\frac{1}{2}$ inch. Prices on application.

Elgin "Special" Valve Stem Packing



Is an Asbestos Packing impregnated with a special lubricant. It will not stick or harden, but will always allow the stem to move freely. Valve Stem Packing is put up in one-pound spools in $\frac{1}{4}$ -inch, $\frac{3}{8}$ -inch, $\frac{1}{2}$ -inch, $\frac{5}{8}$ -inch, $\frac{3}{4}$ -inch and $1\frac{1}{2}$ -inch sizes.

78E1844	Price Net, per spool.....
	\$1.00

Hemp Packing



Put up in coils of 25 lbs. each. We do not sell less than 5 pounds.

78E1850	American "A" Grade. Price, per lb.....
	\$0.35

78E1852	Italian "A" Grade. Price, per lb.....
	\$0.45

Sheet Packing



Cloth Insertion Sheet Packing

A superior quality of cloth inserted Sheet packing. Made 36 inches wide, $\frac{1}{8}$ -3/32- $\frac{1}{16}$ -5/32- $\frac{1}{16}$ - $\frac{1}{4}$ inch in thickness.

78E1862	Net Price, per pound.....
	\$0.35

All pieces are cut 36 inches wide.

Wire Insertion Asbestos Sheet Packing

Good for all purposes, including Gas Engines. Is not injured by heat, cannot vulcanize or burn out, guaranteed for superheated steam. Made in $\frac{1}{32}$ and $\frac{1}{16}$ inch sizes, 40 inches wide. All pieces are cut the width of the sheet, viz. 40 in.

$\frac{1}{32}$ in. weighs 4 lbs. to the square yard; $\frac{1}{16}$ in., 7 lbs.; $\frac{1}{8}$ in., 12 lbs.

78E1866	Net Price, per pound.....
	\$1.25

"Elco" Red Sheet Packing

Can be used on either hot or cold joints especially well, will not harden, carbonize or split up. A very good packing for general purposes. Sizes $\frac{1}{8}$ to $\frac{1}{2}$ inch, 36 inches wide. All pieces are cut the width of the sheet, viz. 36 inches.

78E1864	Net Price, per pound.....
	\$0.40

"Auto-Special" Motor Sheet Packing

Graphite on one side and red mineral compound on other side. A very superior packing made especially for Gas Engine use. In $\frac{1}{32}$ and $\frac{1}{16}$ thicknesses only. All pieces are cut the width of the sheet, viz. 40 in.

$\frac{1}{32}$ in. weighs 4 $\frac{1}{2}$ lbs. to the square yard; $\frac{1}{16}$ in., 7 lbs.

78E1868	Net Price (40 inches wide), per pound.....
	\$1.25

"Bestallic" Asbestos Folded Gaskets



For Man Holes, Hand Holes and Flange Joints.

Will stand any temperature and pressure of steam. May be re-used many times. We know of places where these gaskets have been in continual use for two years without renewal. Folded by hand and made of "German Asbestos Sheet," which contains a fine composition wire. They have no raw edges.

Will cost less per day of service than any other gasket ever made.

Furnished in any size, shape or thickness. In ordering give inside diameters and width of flange.

78E1836	Net Prices
For Hand Holes (4 x 6 and smaller). Per pound.....	\$1.25
For Man Holes (larger than 4 x 6). Per pound.....	\$1.20

"Clinton Special" Diagonal Expansion Packing



For Steam Pressures up to 250 lbs., cold, warm or hot water; Air pumps, Valve Stems etc.

78E1832	Net Price Per Foot
$\frac{1}{4}$ -inch.....	\$0.20
$\frac{3}{8}$ -inch.....	.35
$\frac{1}{2}$ -inch.....	1.25

Also furnished in boxes containing approximately $\frac{1}{4}$, $\frac{5}{16}$ lbs.; $\frac{3}{8}$, $\frac{6}{16}$ lbs.; $\frac{1}{2}$, $\frac{9}{16}$ lbs.; at net, per lb.....

\$1.10

"Gumps" Square Hydraulic Packing



Made from fine duck and rubber friction. Is used for packing the cylinders of hot water pumps. It will not swell while in use. Put up in coils containing 12 feet.

78E1878	Price Net Per Coil.
$\frac{1}{4}$ -inch Sq....	\$0.65
$\frac{3}{8}$ -inch Sq....	.85
$\frac{1}{2}$ -inch Sq....	2.00

$\frac{3}{4}$ -inch Sq.... \$1.40

This is for service where water is being pumped at about boiling point. Put up in coils containing 12 feet.

78E1880	Net Prices Per Coil.
$\frac{1}{4}$ -inch Sq....	\$1.00
$\frac{3}{8}$ -inch Sq....	1.25
$\frac{1}{2}$ -inch Sq....	3.50

$\frac{3}{4}$ -inch Sq.... 1.75

"Elco" Red Tubular Gaskets



For man holes, hand holes, etc. Lead connection and jointing tape furnished with each coil.

78E1858	Put up in coils containing 12 feet.
Size.....	$\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.

Net price, per coil. \$1.00 \$1.50 \$2.95 \$3.90

Number coils in box 5 4 3 2

Net price per box \$4.75 \$5.70 \$8.50 \$7.40

Note—We do not sell less than one coil.

Asbestos Wick Packing

Made of 6-ply Asbestos Yarn, $\frac{1}{8}$ diameter. Put up in $\frac{1}{4}$, $\frac{1}{2}$ or 1 lb. Balls.

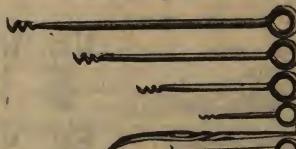
78E1870	Price, per lb.....
	\$1.00

Lamp or Candle Wicking

Put up in sacks, containing 12 balls, weighing 5 pounds.

78E1872	Net Price, per pound.....
	\$0.75

Packing Tools



A Set consists of the following tools: No. 1, 18"; No. 2, 14"; No. 3, 10"; No. 4, 6" corkscrew removing tool; No. 5, 12" Hook, one end, curve, other end; No. 6, 8" Single Hook.

No. 18" \$1.50

No. 12" \$1.00

Oil Cans, Waste, Grease, Graphite, etc.

Copper Plated Steel Oil Cans

Made from 20 gauge Cold Rolled Steel, with high grade Clock Spring Steel Bottoms, Heavily Electro Copper Plated inside and out. Spout connections are turned from solid bar brass containing cut threads. All spouts are interchangeable.



78E1900

Size	Cap'cy Pints	Diam. Inches	Spout Inches	Price, Each
13A	1/2	3 3/8	5	.20
14	1/2	3 3/8	9	.25
14AA	1/2	3 3/8	5	.28
14B	1/2	3 3/8	9	.30
15A	1	4 1/4	5	.33
16	1	4 1/4	9	.39

Machine Oilers

Copper-Plated Steel

Drawn seamless from extra heavy cold rolled steel, double thickness around the lower edge. Bottom clock spring steel Spout Connection turned from bar brass with cut threads. An excellent machinery oiler. Capacity $\frac{1}{4}$ pint, Diameter 3 inches. Spout 5 inches.

Each Dozen
78E1922 Price..... \$0.20 \$2.00



Cotton Waste



Please mention both catalog and grade number when ordering.

78E1824 Bale Lots

No. 1 Extra White.....	Per Lb. \$15
No. 2 White.....	.13
No. 1 Fancy Colored.....	.12
No. 1 Regular Colored.....	.11

78E1825 Less than Bale Lots

	5 lbs.	10 lbs.
No. 1 Extra White.....	\$1.00	\$1.80
No. 2 White.....	.90	1.70
No. 1 Fancy Colored.....	.85	1.60
No. 1 Regular Colored.....	.80	1.50
	25 lbs. 50 lbs.	
No. 1 Extra White.....	\$4.25	\$8.00
No. 2 White.....	3.75	7.00
No. 1 Fancy Colored.....	3.50	6.50
No. 1 Regular Colored.....	3.25	6.00

We carry complete stocks of Leather, Rubber, Balata, Stitched Canvas and Cotton Belting. See Pages to 3-13 Inc.

Improved Cannon Oilers



The Cannon Oiler is the only one having a force pump attachment without the use of any packing nuts. Will never clog up as spout is always full of oil, is controlled by the operator regardless of the position of the can. One drop or a tablespoonful discharges at the will of the operator. Forces oil up to the bearing from any convenient position.

78E1918 Sizes and Net Prices

Sizes	Cap'y Pints	Diam. In.	Hgt. In.	Spout In.	Tin. Price, Each
0	1	3 1/2	9 1/4	9	\$1.15
1	1	3	12 1/2	8	1.15
2	1 1/2	1 1/2	17 1/4	12	1.20
2 1/2	2	4	18	12	1.25
3	2	4	26	20	1.30

Copper-Plated Steel Fillers



Made of steel drawn seamless in one piece. Spouts have large opening to deliver a large volume of oil.

78E1920

Size	Capac'y	Diam. Inches	Height Inches	Price, Each
210	1 Qt.	5	5	\$0.95
211	2 Qt.	6	6	1.25

"Dixon's" Flake Graphite

A perfect lubricant.

Used in all cases where the service required of a lubricant is very severe.



78E1822	In 1 lb. paper box, each net.....	\$0.50
	In 5 lb. tin cans, each, net.....	2.00
	In 10 lb. tin cans, each, net.....	4.00

Justrite Oily Waste Can



Convenient, Clean and Durable. To raise cover, press on handle with foot; both hands are free cover closes automatically.

Made in accordance with the rules of the National Board of Fire Underwriters.

78E1916 Net Prices

No.	Capacity	Size	Each
1	6 gal.	11 1/2 x 13	\$4.25
2	8 gal.	12 1/2 x 14	4.75
3	10 gal.	13 1/2 x 15	5.25

Automotive Pump Oilers

Fitted with Cannon Air Tight Brass Valves



The spout may be detached and the oiler packed in a small tool box; the oil cannot leak out when the spout is removed. Spout lengths are interchangeable and adjustable to any angle.

The body is drawn seamless of one piece of heavy steel, brightly copperized and the bottom is double seamed oil tight.

78E1912 Size and Net Prices

Sizes	Cap'y Pints	Diam. In.	Hgt. In.	Spout In.	Steel Price, Each
A1	1/2	3	8 1/2	5	\$1.75
A2	2/2	3	8 1/2	9	1.80
A2	1	4	1	5	1.85
A4	1	4	1 1/2	9	1.90

Extra Spouts with couplings, each..... \$0.50
Flexible Spouts, each..... 1.00

The Handy Pump Oiler



It pumps the oil by means of a brass pump fitted with air tight valves. It pumps oil at any angle, and in any quantity desired. Made of steel, drawn seamless in one piece. Capacity, $\frac{1}{2}$ pint, diameter 4 inches, spout $4\frac{1}{4}$ inches; height $3\frac{1}{2}$ inches. Finished in light lacquered steel.

78E1904 Price, each..... \$0.95

Lubricating Oils



Net Prices per Barrel—50 Gals.

Furnished in barrels and half-barrels only. Engine Oil..... Medium \$19.65 Heavy \$21.00 Machine Oil..... " 19.50 " 20.50 Gas Engine Oil " 20.50 " 24.25 Cylinder Oil..... 28.50

"Elco" Automobile Oil

A high refined Automobile Oil. Use the proper weight for your machine and you will agree that "Elco" is equal to the best at a saving.

Light—Winter... \$22.75 Heavy \$30.00 Light—Summer... 25.50 XXHeavy 32.50 Medium..... 28.00 XXXHeavy 35.00

Above price include wood barrels, half barrels furnished at one-half the price of barrel lots.

"Elco" Cup Grease or Hard Oil

78E1816. Especially adapted for Threshers, Engines, Line Shafting in Mills and Factories and all high speed journals that are intended to run cool.

In 5 pound cans, price each, net..... \$0.65 In 10 pound cans, price each, net..... 1.20 In 25 pound cans, price each, net..... 2.50

GREASE CUPS & OIL CUPS



Plain Brass Grease Cups

Made entirely of brass. No flat surface where grease can stick and clog.

78E1952
Capacities and Net Prices

Size	Inside Diam.	Pipe Thread	Cap., Oz.	Price, Each	Price, Doz.
000	3/4	1/8	1/4	\$0.13	\$1.30
00	1	1/8	1/2	.17	1.70
0	1 1/4	1/4	2/3	.30	3.00
1	1 1/2	1/4	1	.40	4.00
2	2	3/8	2	.65	6.50
3	2 1/2	3 1/2	.95	9.50	
4	3	1/2	5	1.20	12.00

Automatic, Pressed Steel Grease Cups

The cups are of the same general construction as the Spring Compression Grease Cups listed opposite, except that they are made of pressed steel, instead of brass.

Please note information regarding size pipe threads in right hand corner of page when ordering.

78E1954. Sizes and Prices

Size	Diam.	Pipe Threads	Cap., Oz.	Price, Each
300	1"	1/8"	1/4	\$0.50
30	1 1/4"	1/4"	1	.57
31	1 1/2"	1/4"	1 1/2	.60
32	2"	3/8"	3	.80



Gas Engine Lubricators

Top and bottom plates cast brass. The sight feed post is large and strong—contains a glass one inch in diameter. Both the set feed and the stop feed features are employed.



78E1962
Sizes and Net Prices

Number	202	203	204	205
Outside diam. Glass, inch.....	2	2 1/4	2 1/2	3
Height, Glass, Inch.....	1 1/8	2 1/8	2 3/8	3
Capacity, ounces.....	2 1/4	4	5	10
Shank Pipe, inch.....	3/8	3/8	3/8	1/2
Price, each.....	\$1.50	\$1.75	\$2.00	\$2.70
Glasses, each.....	.25	.30	.50	.70
Gaskets, each.....	.05	.05	.06	.07

Plain Brass Oilers

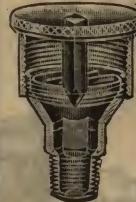
Made of brass, nicely polished, with finished threads. Note information in lower right hand corner, for sizes pipe thread.



78E1970
Net Prices

Size	Diameter Inch	Pipe Inch	Price, Each
0	3/4	1/8	\$0.25
1	5/8	1/8	.30
2	1	1/4	.35
3	1 1/8	1/4	.40
4	1 1/4	1/4	.50
5	1 1/2	3/8	.80
6	1 3/4	1/2	1.00
8	2	1/2	1.50

Pressed Steel Grease Cups With Steel Spring Lock



Fitted with a simple and effective device for preventing the cap from jarring off. The locking mechanism operates in the grease and is free to act at all times regardless of the hardness of the grease or the pressure which it may be under.

78E1950
Sizes and Net Prices

Size	0001	001	011	012	013
In. diameter	1	1 1/4	1 1/2	2	2 1/2
Pipe Thread	1/8	1/4	1/4	3/8	1/2
Capacity, oz.....	1/2	2/3	1	2	3 1/2
Price, each.....	\$0.12	\$0.16	\$0.19	\$0.22	\$0.30
Price, dozen.....	1.20	1.60	1.90	2.20	3.00

Pressed Steel Grease Cups



Strong and well made. Suitable anywhere where brass is not required.

78E1960
Net Prices and Capacity

Size	Inside Diam.	Pipe Thread	Cap., Oz.	Price, Each	Price, Doz.
1000	3/4	1/8	1/4	\$0.05	\$0.50
100	1	1/8	1/2	.06	.60
10	1 1/4	1/4	2/3	.08	.80
11	1 1/2	1/4	1	.10	1.00
12	2	3/8	2	.15	1.50
13	2 1/2	1/2	3 1/2	.20	2.00
14	3	1/2	5	.30	3.00

Spring Compression Grease Cups

Positive Force Feet.

Is automatic in its operation. The rate of feed can be regulated by the screw T. The base slopes to the center on the inside, insuring that all the grease will be fed, and it can be screwed into place on the bearing either by using a wrench on the hexagon, or by using a flat piece of iron with the lugs SS.

Finished Brass.

78E1956
Sizes and Net Prices



Size	Inside Diam.	Height Ins.	Pipe Thread	Cap. Oz.	Price, Each
60	1 1/4	4 3/4	1/4"	1	\$1.20
61	1 1/2	5 3/4	1/4"	1 1/2	1.50
62	2	6 1/2	3/8"	3 1/4	1.90
63	2 1/2	7 1/2	1/2"	6	2.60
64	3	8 3/8	5/8"	10	3.60

Glass Body Oil Cups

With Sight Feed, Set Feed and Stop Feed

When lever is in horizontal position, the feed is entirely shut off; when upright, the oil is fed at the regular rate per minute; and when at an angle of 45 degrees, the oil will feed out in a stream.

78E1966
Net Prices

Number	1	1 1/2	2
Outside diam., Glass.....	1 1/2	1 3/4	2
Height Glass.....	1 1/8	1 5/8	1 7/8
Capacity, ounces.....	1	1 1/2	2 1/2
Shank, Pike Thread.....	1/4	1/4	3/8
Price, each.....	.95	\$1.00	\$1.15

Number	3	4	5
Outside diam., Glass.....	2 1/4	2 1/2	3 1/2
Height Glass.....	2 1/2	2 3/8	3
Capacity, ounces.....	4	5	10
Shank, Pipe Thread.....	3/8	3/8	1/2
Price, each.....	1.35	1.55	1.80

For Glasses and Gaskets, See 78E1964

Plain Brass Cylinder Lubricator



Brass Finish Steam Chest Oilers. Please Note—information below for the correct size pipe thread when ordering.

78E1968
Net Price, Each

Number	0	1	1 1/2
Outside diam. Glass.....	1 1/4	1 1/2	1 3/4
Height Glass.....	1 1/8	1 3/8	2 1/8
Capacity, ounces.....	1/2	1	1 1/2
Shank Pipe Thread.....	7/8	1/2	3/4
Price, each.....	\$0.70	\$0.80	\$0.85
Glasses, each.....	.20	.20	.25
Gaskets, each.....	.05	.05	.05

Number	2	3	4
Outside diam. Glass.....	2	2 1/4	2 1/2
Height Glass.....	2 1/8	2 3/8	2 5/8
Capacity, ounces.....	2 1/2	4	5
Shank, Pipe Thread.....	3/8	3/8	3/8
Price, each.....	.95	1.10	1.20
Glasses, each.....	.25	.35	.50
Gaskets, each.....	.10	.10	.10

CORRECT SIZE PIPE SHANKS For Various Size Holes.

Size Pipe Thread	Fits Size Hole
1/4 in.	5/8 in.
1/2 in.	1/2 in.
5/8 in.	11/16 in.
11/16 in.	15/16 in.
11/8 in.	1 1/16 in.
1 1/8 in.	1 1/8 in.

In ordering, be sure to specify the correct pipe shank.

INSPIRATORS, INJECTORS AND GAUGE GLASSES

"HANCOCK" INSPIRATOR

"STATIONARY" TYPE



The Hancock Inspirator, as illustrated, is almost too well known to need further description. It works with high or low steam pressures on all lifts up to 25 feet, or when taking water under a head, with hot feed water as well as cold. For all steam pressures and for all conditions its operation is the same, and it requires no adjustment for varying steam pressures.

The principle employed is the simplest. A lifting apparatus lifts the water and delivers it to the forcing apparatus, which in turn, forces it into the boiler. The lifting apparatus, acting as a governor, delivers to the forcing apparatus the required amount of water to properly condense the steam under all conditions.

78E2202

Net Price-Size and Capacity

Sizes	Price Each Net	Pipe Connections			Capacity per hour with 60 pounds steam pressure	Horse Power For the ordinary type of boiler and engine
		Steam	Suction and deliv.	Overflow		
7½	\$10.40	3/8	3/8	1/4	60 gals.	4 to 6
8 3/4	11.70	1/2	1/2	1/2	90 gals.	6 to 8
10	13.00	1/2	1/2	1/2	120 gals.	8 to 15
12 1/2	16.25	1/2	1/2	1/2	220 gals.	15 to 30
15	19.50	1/2	1/2	1/2	300 gals.	30 to 40
17 1/2	26.00	3/4	1	1/2	420 gals.	40 to 60
20	29.25	3/4	1	1/2	540 gals.	60 to 75
22 1/2	35.75	1	1 1/4	1	720 gals.	75 to 90
25	39.00	1	1 1/4	1	900 gals.	90 to 120
30	48.75	1 1/4	1 1/2	1 1/4	1260 gals.	120 to 165
35	57.50	1 1/4	1 1/2	1 1/4	1740 gals.	165 to 230
40	71.50	1 1/2	2	1 1/2	2230 gals.	230 to 300
45	81.25	1 1/2	2	1 1/2	2820 gals.	300 to 375
50	97.50	2	2 1/2	2	3480 gals.	375 to 500
55	113.75	2	2 1/2	2	3650 gals.	500 to 600

Note.—We send a flat strainer with each of these inspirators, sizes 7½ to 20, inclusive.

GAUGE GLASSES



These glasses are made of the best material that can be obtained for the purpose. While we cannot guarantee them against quick and excessive temperature changes, if the change is gradual they will carry as high temperature as ordinary use will require. We do not sell less than one-half dozen.

Lengths not given, take price of next longer tube of same diameter

78E2204

Sizes and Prices Net

Length Inches	1/2 inch		5/8 inch		3/4 inch	
	1/2 doz.	Doz.	1/2 doz.	Doz.	1/2 doz.	Doz.
10	\$1.07	\$1.93	\$1.27	\$2.33	\$1.63	\$3.06
11	1.17	2.13	1.39	2.57	1.79	3.37
12	1.26	2.32	1.50	2.80	1.94	3.67
13	1.36	2.51	1.62	3.03	2.09	3.98
14	1.46	2.71	1.74	3.27	2.24	4.28
15	1.55	2.90	1.85	3.50	2.40	4.59
16	1.65	3.09	1.97	3.73	2.55	4.89
17	1.75	3.29	2.09	3.97	2.70	5.20
18	1.84	3.48	2.20	4.20	2.85	5.50
20	2.03	3.86	2.43	4.66	3.16	6.11
22	2.23	4.26	2.67	5.13	3.47	6.73
24	2.42	4.64	2.90	5.60	3.77	7.34

"PENBERTHY" AUTOMATIC INJECTOR



For all around use and Especially adapted for Traction and Portable Engines. Every "Penberthy" Injector is carefully tested before leaving the factory and no Machine is allowed to go out that will not work on the following points, while nearly all of them will do much better.

Start Low.

20 to 22 lbs. steam on 3 foot lift

Work High.

165 to 170 lbs. steam on 3 foot lift.

Lift. Water

20 to 24 feet on 60 to 80 lbs. steam.

Handle Hot Water.

125 degrees to 130 degrees at 60 to 80 lbs. steam. 115 degrees to 120 degrees at 100 lbs. steam. 95 degrees to 104 degrees at 125 lbs. steam.

Regular Pattern

Style Left and Back.

Suction Left, overflow front, Discharge Back.

78E2208

Net Prices and Capacity

Size	Price	Horse Power Based on Ordinary Tub. Boiler.	Pipe Connection	Capacity per Hour, 1 to 3 feet lift, 60 to 85 lbs. Steam Pressure Maximum	Minimum
O	\$ 7.50	3 to 6	1/4 inch	60 gal.	40 gal.
OO	8.00	4 to 8	5/8 inch	80 gal.	55 gal.
A	9.00	8 to 16	1/2 inch	135 gal.	70 gal.
AA	10.00	12 to 22	5/8 inch	180 gal.	100 gal.
B	12.50	17 to 32	3/4 inch	260 gal.	140 gal.
BB	15.00	20 to 45	3/4 inch	355 gal.	170 gal.
C	20.00	40 to 65	1 inch	475 gal.	300 gal.
CC	22.50	45 to 80	1 inch	600 gal.	350 gal.
D	27.50	50 to 100	1 1/4 inch	800 gal.	425 gal.
DD	30.00	75 to 135	1 1/4 inch	1000 gal.	525 gal.
E	37.50	100 to 180	1 1/2 inch	1400 gal.	800 gal.
EE	45.00	115 to 225	1 1/2 inch	1900 gal.	900 gal.
F	55.00	160 to 320	2 inch	2400 gal.	1300 gal.
FF	62.50	200 to 400	2 inch	3000 gal.	1600 gal.
G	75.00	300 to 500	2 1/2 inch	3600 gal.	2000 gal.
GG	100.00	375 to 600	2 1/2 inch	4200 gal.	2500 gal.

A Strainer Furnished With Every Injector

The Penberthy Injector can be furnished with special connections as required. Regular pattern always sent unless otherwise ordered

"FIRMA" COMPOUND WATER GAUGE GLASS

UNBREAKABLE—DURABLE

For Highest Steam Pressures and Temperatures.

The frequent breaking of the common gauge glass is a source not only of annoyance but at times of great danger to the engineer. This trouble is avoided in our "FIRMA" Gauge Glass by drawing two glass tubes, of different degrees of expansibility, one over the other. The whole is then fused into a solid tube.

These glasses are unbreakable from natural causes. They are not affected by a drop of water, a flake of snow, or a sudden draft of cold air coming in contact with the glass while it is hot. The great importance of this will be appreciated by every engineer.

78E2206

Net Prices Per Dozen

Length Inches	1/2 and 5/8 Inch Per Dozen	3/4 Inch Per Dozen
10	\$4.50	\$6.30
12	5.40	7.56
14	5.94	8.64
16	7.02	10.26
18	7.74	10.98
20	8.10	12.60
22	9.90	13.32
24	10.80	15.12

We do not sell less than 1/2 dozen, or one package.

LUBRICATORS, GAUGES, VALVES AND SUPPLIES



"Detroit"
Improved
Standard
Lubricator

For Stationary
Engines
Double and Single
Connection

This Lubricator is intended especially for the better class of engines, and represents the very highest development in its line.

It is the most convenient, most durable and most reliable sight-feed lubricator made, and has been used exclusively for several years past by upwards of nine-tenths of the prominent American builders of stationary engines.

Price and Capacity

78E2150

Sizes.....	½ Pint	½ Pint
For Cylinder.....	Under 10"	10 to 12"
Pipe Thread.....	½	½
Price, Each:		
Brass, Dbl. Con.	\$10.25	\$10.50
Brass, Sgle. Con.	10.50	10.85
Glasses, Each:		
Sight-Feed.....	.15	.15
Gauge.....	.25	.25
Sizes.....	1 Pint	1 Quart
For Cylinder.....	12 to 18"	18 to 30"
Pipe Thread.....	½	½
Price, Each:		
Brass, Dbl. Con.	\$12.50	\$15.25
Brass, Sgle. Con.	12.75	15.60
Glasses, Each:		
Sight-Feed.....	.15	.15
Gauge.....	.25	.25

Note.—The above prices are for **Single and Double Connection** Lubricators. Be sure to state which is desired—unless stated we will ship double connection.

Steam or Pressure Gauge



Single Spring
For Stationary Boiler

Adapted for steam, air, gas, water and any fluid-pressure that will not affect its brass tube spring; and is regularly made for any graduation not above 500 pounds.

All our gauges are accurately graduated by open mercury column, have non-corrosive movements, and are warranted correct before leaving the Works.

When ordering do not fail to state the pressure per square inch to which you wish the gauge graduated.

No steam gauge warranted if used without a siphon of sufficient capacity to fill the gauge spring with water and keep it cool. Cock included with each gauge.

78E2166 Net Prices Style 500

Size Dial, Inches	Iron Case Brass Ring, Price, Each	Brass Case, Price, Each
3½	\$ 2.85	\$ 5.70
4½	3.15	6.50
5	3.60	6.75
5½	6.00	8.20
6	7.80	10.80
6½	9.60	13.25
8½	13.00	18.00

"Swift" Lubricator
Will Flash Sight Feed



This Lubricator has been invented and perfected by an engineer of 30 years' practical experience. It is simple in its design and positive in its operation. Has no outside tubes to be disarranged or broken.

The Single Connection type will feed any oil in the coldest weather.

Single Connection for Tract. and Port Engines, Steam Pumps, etc.

Double Connection for Stationery Eng., Steam Pumps, etc.

PRICE AND CAPACITY

Single Connection—Class F. S. C.

78E2152

Size.....	½ Pint	½ Pint	Pint
Pipe Thread.....	½	½	½
Price, Each.....	\$3.75	\$4.00	\$6.00

Double Connection—Class F

78E2154

Size.....	½ Pint	½ Pint	1 Pint
Pipe Thread.....	½	½	½
Price, Each.....	\$3.00	\$3.25	\$4.65

Pipe Siphons

For Use on Our Single Spring Steam Gauges

78E2158



Fig. 557

Price, ¼-inch Iron Pipe, each.....\$0.25
Price, ¼-inch Brass Pipe, each.....1.00

Note.—A Siphon should always be used in connection with a steam gauge.

Steam Gauge Cocks

T Handle
Finished Brass

78E2160

Price, ¼-inch Pipe,
each.....\$0.50

Gauge Glass Cutter

Genuine "Chesterton"



This is a very convenient tool for accurately and easily cutting Gauge Glasses to any desired length.

78E2162. Price, each.....\$2.25

Favorite Gauge Glass Cutter



78E2164 Price, each.....\$0.40

Gauge Glass Gaskets

Moulded Round Edge
Price, Moulded Round Edge

78E2168 ½, ¾ or 1½-inch.....Per dozen....\$0.30

78E2170 Price, Cut Square Edge

½, ¾ or 1½-inch.....Per dozen....\$0.20

78E2172 Rough Body, Iron Wheel

½x12 \$2.15

¾x12 2.25

¾x16 3.00



Brass Gate Valves

Straight Way

Brass, with Gland Wedge
Gate, Brass Seat, Non-rising
Stem.

Recommended for use with
Fire Apparatus because of its
free opening.

Style 438—Screwed Net Prices				
Size, in.....	⅛	½	¾	1
Price, ea....	\$0.90	\$1.00	\$1.25	\$1.70
Size, in.....	1¼	1½	2	2½
Price, ea....	\$2.20	\$3.00	\$4.35	\$7.75

Globe and Angle Valves



Brass
with
Iron
wheel.



No. 1 Globe					No. 2 Angle				
78E2252 Either No. 1 or No. 2, Each					78E2258				
Size....	⅛	½	¾	1	Size....	⅛	½	¾	1
Price....	\$0.60	\$0.60	\$0.65	\$0.80	\$1.00	\$1.50			
Size....	1¼	1½	2	2½	3				
Price....	\$2.00	\$2.80	\$4.25	\$8.00	\$12.00				



Standard
Check
Valves

Style No. 20. Plain Check

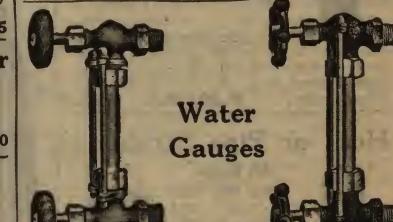
Style No. 28. Check with Drip.

78E2256 Plain					Net Prices				
Size....	⅛	½	¾	1	Size....	⅛	½	¾	1
Price, ea....	\$0.65	\$0.65	\$0.70	\$0.90	\$1.15				
Size....	1	1¼	1½	2	2½				
Price, ea....	\$1.60	\$2.25	\$3.15	\$4.57	\$9.00				

78E2258 Drip Cock—Net Prices

Size.... ½ ¾ 1 1½

No. 28, Each \$1.85 \$2.40 \$2.85 \$3.50



Water
Gauges

Net Prices, Each			
Size Glass	Pipe Thread, Inch	78E2172	78E2174
½x12	⅛	\$2.15	\$2.75
¾x12	½	2.25	3.20
¾x16	¾	3.00	4.00

SPRAYERS, HOSE AND SUPPLIES

Sherman's Brass Hose Clamps

78E1930 For Water Hose



Size In.	Price Dozen	Price Each
1/2	\$0.50	.05
3/4	.60	.06
1	1.70	.17
1 1/2	2.00	.20
2	2.50	.25
	3.50	.35

Note—When ordering, state whether to be used on 3, 4, or 5-ply hose.

78E1933 For Steam Hose	
3/4 inch, 4-ply, each.	\$0.17
1 inch, 4-ply, each.	.20
1 1/4 inch, 4-ply, each.	.25
1 1/2 inch, 5-ply, each.	.30
1 1/2 inch, 4-ply, each.	.35
1 1/2 inch, 5-ply, each.	.40

Double Hose Clamps



For use on Hose menders. Does away with two clamps. Only one bolt to tighten and the hose is mended.

78E1934

Size	Doz.	Each
1/2 inch.....	\$1.00	\$0.10
3/4 inch.....	1.20	.12

Steam Hose Couplings



78E1935 Price, Pair	
Size—Inches	
1/2	\$0.75
3/4	\$0.80
1	\$0.90
1 1/4	\$1.20
1 1/2	\$1.50

Brass Hose Couplings

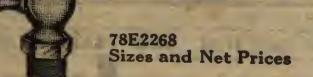


78E1936 Net Prices Each

1/2 inch \$0.20	1 1/4 inch \$0.80
3/4 inch .25	1 1/2 inch 1.00
1 inch .30	2 inch 1.75

Compression Gauge Cocks

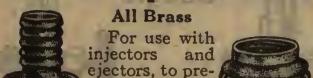
Prices Include Stuffing Boxes



78E2268 Sizes and Net Prices

Number.....	383	384	385
Pipe Thread, in.	3/8	1/2	3/4
Price, each.....	\$0.90	\$0.95	\$1.05

Hose or Pipe Strainers



All Brass

For use with injectors and ejectors, to prevent passageways in the jets from being stopped up by pieces of dirt.

Net Prices

78E2262 For Pipe.	Size pipe, 1/4 1 1/4 1 1/2 2
Price, each.....	\$0.50 \$0.60 \$0.75 \$1.20 \$2.00

78E2264 For Hose.	Size hose... 3/4 1 1 1/4 1 1/2
Price, each	\$0.50 \$0.60 \$0.80 \$1.20

"GUMP'S" STEAM HOSE

For Steam and Hot Water



78E1931 Net Price Per Foot

Size Inch	4 Ply	5 Ply	6 Ply	8 Ply
3/4	\$0.35	\$0.45	\$0.55	\$0.70
1	.45	.55	.65	.85
1 1/4	.50	.65	.75	1.00
1 1/2	.60	.75	.90	1.25

Table of Steam Pressures and Corresponding Temperatures

Steam Gauge	Degrees Fahrenheit	Steam Gauge	Degrees Fahrenheit
0	212	60	307
5	228	70	316
10	240	85	327
20	259	100	338
30	274	125	353
40	287	150	366
50	298	200	388

Table of Maximum Pressures for Steam Hose

Size Inch	4	5	6	8
3/4	60 lbs.	70 lbs.	80 lbs.	100 lbs.
1	50 lbs.	60 lbs.	70 lbs.	90 lbs.
1 1/4	40 lbs.	50 lbs.	60 lbs.	80 lbs.
1 1/2	30 lbs.	40 lbs.	50 lbs.	70 lbs.
2	20 lbs.	30 lbs.	40 lbs.	60 lbs.

BLACK SNAKE GARDEN HOSE



Has a seamless circular braiding. Impossible for the plies or fabric to unwrap.

Each fabric

complete separate hose, built above the other. Superior to hose made of a single piece of duck wrapped to several thicknesses.

Stronger than ordinary hose of double the number of plies. Guaranteed that it may be tied in knots without injury.

Price, in 25 and 50 Foot Lengths

Coupled with 3/4-inch Standard Couplings.

78E1937	1/2 coupled 25 feet length, net.....	\$4.00
	5/8" coupled 50 feet length, net.....	7.75

The Standard Size of Lawn Hose



Compressed Air Sprayer

Will stand the hardest usage and will last for years. Tank of heavy galvanized steel, closely riveted and heavily soldered. Air pump made of seamless brass. Best quality acid proof hose.

Two nozzles—one for spraying and one for straight stream. One filling will spray for from 10 to 15 minutes. Made in three sizes, for whitewashing, coldwater painting and all kinds of spraying and disinfecting.

78E3051—4 Gal. size 3 ft. hose.....	\$5.25
78E3052—6 Gal. size 4 ft. Hose.....	6.50
78E3053—9 Gal. size 6 ft. Hose.....	7.00

Diamond Spray Nozzles

Our Diamond Spray Nozzle is accurately fitted, well made and nicely finished. A quarter turn will change the delivery from full stream to fine spray.

78E1938	Price, 3/4-inch, each.....	\$0.65
	Price, 3/4-inch, dozen lots, per doz	\$6.50

Plain Hose Nozzles

78E1939	Net Prices.
Fig. No. 97—Hose Pipe Thread	
Size, ins...	3/4 1 1 1/4 1 1/2
Lgth., ins...	6 4 8 12 18
Price, ea...	\$0.50 \$0.35 \$0.60 \$1.20 \$1.50

Iron Hose Menders

78E1940	Net Prices
1/2-inch, each, \$0.05	dozen, \$0.50
3/4-inch, each, .07	dozen, .70
1 -inch, each, .08	dozen, .80

Brass Hose Menders

78E1941	Net Prices Each
1/2-inch.....	\$0.12
3/4-inch.....	.18
1 -inch.....	.25

Air Cocks

With either T handle as illustrated or Lever handle.

Net Price Each

Size, Ins.	78E2266 T Handle	78E2267 Lever Handle
1/8	\$0.20	\$0.28
1/4	.23	.30
3/8	.25	.35
1/2	.30	.40

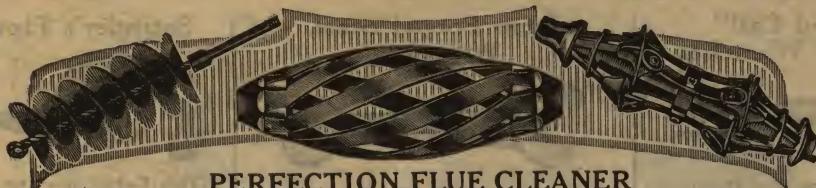
"ELCO" ROOFING



Complete stock of all grades
Prices on application

Flue Cleaners, Hoists, Jacks and Pumps

Wire Flue
Cleaners
Flat Steel



Duplex
Flue
Cleaners

Double-Headed,
Double-Acting,
Adjustable,

PERFECTION FLUE CLEANER

Size given is Outside diameter of tube.

78E2116

Outside Diam. Inches	Price Each	Outside Diam. Inches	Price Each
1 1/4	\$0.50	2 1/4	\$1.35
1 1/2	.60	3	1.45
1 3/4	.75	3 1/4	1.55
2	.95	3 1/2	1.65
2 1/4	1.00	4	1.95
2 1/2	1.25		

78E2118 Size given is Outside diameter of tube.

Outside Diam. Inches	Price Each	Outside Diam. Inches	Price Each	Outside Diam. Inches	Price Each
1 1/4	\$1.50	2 1/2	\$1.85	4	\$3.25
1 1/2	1.50	2 3/4	2.00	4 1/2	4.00
1 3/4	1.50	3	2.25	5	4.80
2	1.50	3 1/4	2.75		
2 1/4	1.75	3 1/2	3.00		

DIFFERENTIAL HOISTS



This is the simplest of all chain hoists, and where a hoist is required but occasionally and high speed and efficiency are not essential, it serves the purpose admirably.

This hoist is made with exceeding care and of the best material obtainable. It has drop-forged steel hooks and the very best grade of chain.

78E2016 Sizes and Net Prices

Cap. Tons	Reg. ft. Hoist	Net Wt. Pounds	Price Complete	Extra Hoist Per ft.
1/4	6	22	\$16.25	\$2.30
1/2	7	30	18.90	2.40
1	8	51	25.25	2.50
1 1/2	8 1/2	81	32.40	2.70
2	9	122	43.20	2.80
3	9 1/2	180	54.00	3.00

"BARTH" JACKS

Double Action—Reversible

For Automobiles, Wagons, Tractors,
Threshing Machines, etc.



All material is carefully selected and thoroughly tested. Nos. 1, 2, 3, 4 and 5, are constructed throughout of the highest grade of Malleable Iron, being exceedingly tough without being brittle. In Jack No. 6 the rack, upper and lower pawls are made of High Carbon Cast Steel.

No. 3 Jack is for automobiles. No. 2 is intended for a Wagon Jack.

Nos. 4, 5 and 6 for Traction Engines and Threshers, Ditching Machines.

78E2018 Sizes and Net Prices

Size	Cap. Tons	Height Rack Down Inches	Rise Rack Inches	Wt. Lbs.	Net Price
2	1	14 1/2	11	9	\$ 4.20
3	1	10 1/2	7	6 1/2	3.50
4	3	14	8	20	8.00
5	6	18	11	33	11.75
6	10	20	12	68	22.00



FORD TRIBLOC

Proved by test to be the best hoist on the market. Made entirely of steel it lowers the load rapidly, smoothly, and holds it securely. Planetary steel gears, enclosed in dust proof steel cases, insure long life and ease in operation. Gears center around the main bearing with pressure perfectly balanced. Forged steel swivel hooks. A perfect hoist.

78E2024 Sizes and Net Prices

Cap. Tons	Reg. ft. Hoist	Net Wt. Pounds	Price Complete	Extra Hoist Per ft.
1/2	8	53	\$52.50	\$1.45
1	8	80	67.50	1.60
1 1/2	8	124	90.00	1.65
2	9	188	105.00	1.70
3	10	200	135.00	2.40

Larger sizes furnished. Prices on application.

ROTARY FORCE PUMPS

With Tight and Loose Pulleys

Will Draw Water 15 Feet and Elevate 100 Feet



Our Power Rotary Force Pump, on Iron Frame is designed for the use of Mills, Oil Refineries, Distillers, Creameries, Brewers, Wine Producers, Varnish Makers, Meat Packers, etc., in fact, wherever water or other liquid must be rapidly elevated by power. This Pump can be used against a pressure of 40 pounds to the square inch, which renders it particularly useful for discharging into an elevated Tank, also as a Fire Pump for use about Mills, Factories, Warehouses, etc., where power is obtainable. It will throw water from 100 to 150 feet horizontally. In discharging to a Tank, the cap, as shown in cut on upward discharge, should be placed on the spout. For pumping acids, the Bronze Pumps should be used, and when intended for hot liquids, they should have Metallic Check Valve. Drip-cocks are provided to prevent freezing.

Speed, 100 to 200 R. P. M.
SIZES, CAPACITIES AND NET PRICES

No.	Suction Fitted for Pipe	Discharge Fitted for Pipe	Size Pulleys	Discharges at 100 Rev. per Minute	Net Price, All Iron
1	1 1/4 inch	1 inch	7 x 2 1/2	11 gal.	\$17.50
2	1 1/4 inch	1 inch	7 x 2 1/2	15 gal.	19.25
3	1 1/4 inch	1 1/2 inch	7 x 2 1/2	20 gal.	22.50
4	2 inch	1 1/2 inch	11 x 3	25 gal.	36.50
5	2 inch	2 inch	11 x 3	36 gal.	40.00

These Pumps are fitted for Iron Pipe, but will be fitted for Lead Pipe or Hose when so ordered.

Price on Bronze Pumps on Application.

Wrenches, Pipe Cutters and Pipe Vises

"Bemis and Call" Combination Wrenches



With
Long
Nut

These wrenches combine all of the superior qualities of our Gas Pipe Wrenches and of a regular Nut Wrench, thus making a combination which has no equal.

Head steel-faced and steel jaw, with wrought iron bar, cast-hardened throughout. Parts interchangeable.

78E2052 Sizes and Prices, Each

10 inch, for pipe $\frac{1}{4}$ to 1 inch.....	\$2.25
12 inch, for pipe $\frac{1}{2}$ to $1\frac{1}{4}$ inch.....	2.70
15 inch, for pipe $\frac{1}{2}$ to $2\frac{1}{4}$ inch.....	3.65

"Stillson's or "Trimo" Pipe Wrenches



We can furnish either Stillson's or Trimo wrenches at the same price. State which is wanted.

78E2056

Lgth. (Open Ins.)	Holds Pipe, Ins.	Price Each	Extra Parts, Each		
			Jaws	Frame	Nut
6	$\frac{1}{2}$ to $\frac{1}{2}$	\$0.90	\$0.40	\$0.20	\$0.10
8	$\frac{1}{2}$ to $\frac{3}{4}$	1.00	.40	.25	.10
10	$\frac{1}{2}$ to 1	1.15	.45	.25	.10
14	$\frac{1}{2}$ to $1\frac{1}{2}$	1.60	.60	.30	.15
18	$\frac{1}{2}$ to 2	2.25	.80	.40	.20
24	$\frac{1}{2}$ to $2\frac{1}{2}$	3.25	1.15	.50	.30
36	$\frac{1}{2}$ to $3\frac{1}{2}$	6.00	2.20	.85	.55
48	1 to 5	9.00	3.75	1.10	.75

Machinist's Knife Handle Wrenches



This wrench is made for Mechanics' use, from the best material obtainable, accurately fitted and every wrench guaranteed. Nothing better made.

78F2050 Forged Steel Bar.

6 inch, price each.....	\$0.85
8 inch, price each.....	1.00
10 inch, price each.....	1.25
12 inch, price each.....	1.55
15 inch, price each.....	2.15
18 inch, price each.....	2.65
21 inch, price each.....	3.20

Adjustable "S" Nut Wrenches



Made of A High Grade Material Throughout.

Excellent Construction.

78E2054 Price, Each

6-in., opens to $\frac{3}{4}$ ".....	\$0.70
8-in., opens to 1 "	.80
10-in., opens to $1\frac{1}{8}$ ".....	1.00
12-in., opens to $1\frac{1}{8}$ ".....	1.50

Drop Forged Steel Wrenches



DOUBLE HEAD

Made from bar steel, forged in dies. The openings are milled out to fit the nuts designated and are always ready; no adjustment necessary, saves time. Made in two styles, as follows:

Unfinished—Is the natural steel with jaws milled to fit the nuts.

Semi-Finished—**Hardened all over**, heads polished bright and will stand the hardest kind of usage. Guaranteed against flaws or defects. Openings are at an angle of 15°.

Double Head—Engineer's Pattern.

78E2052

No.	Size Bolts, U. S. Std. Nuts	Ex- treme Length	Price, Un- finished	Price Semi- finished
23	$\frac{1}{2}$ and $\frac{1}{4}$	4	\$0.10	\$0.17
25	$\frac{1}{2}$ and $\frac{1}{4}$	$4\frac{1}{2}$	.13	.20
26	$\frac{1}{2}$ and $\frac{1}{4}$	$5\frac{1}{2}$	.16	.24
27	$\frac{1}{2}$ and $\frac{1}{4}$	$5\frac{1}{2}$	.17	.25
28	$\frac{1}{2}$ and $\frac{1}{4}$	6	.20	.29
29	$\frac{1}{2}$ and $\frac{1}{4}$	$6\frac{1}{2}$	.20	.30
30	$\frac{1}{2}$ and $\frac{1}{4}$	$7\frac{1}{2}$	.24	.35
31	$\frac{1}{2}$ and $\frac{1}{2}$	$7\frac{1}{2}$	.25	.36
32	$\frac{1}{2}$ and $\frac{1}{2}$	$8\frac{1}{2}$	.29	.44
33	$\frac{1}{2}$ and $\frac{1}{2}$	$8\frac{1}{2}$	.30	.45
34	$\frac{1}{2}$ and $\frac{1}{2}$	$9\frac{1}{2}$	.36	.54
35	$\frac{1}{2}$ and $\frac{1}{2}$	$9\frac{1}{2}$	.37	.55
36	$\frac{1}{2}$ and $\frac{1}{2}$	$11\frac{1}{2}$	.52	.75
37	$\frac{1}{2}$ and $\frac{1}{2}$	$11\frac{1}{2}$	.53	.76
38	$\frac{1}{2}$ and $\frac{1}{2}$	$13\frac{1}{2}$	.80	1.12
39	$\frac{1}{2}$ and $\frac{1}{2}$	$13\frac{1}{2}$	.80	1.12

General Purpose Wrench Sets



DOUBLE HEAD

In Sets of 5 Wrenches, Taking Nuts $\frac{1}{4}$ to $\frac{1}{2}$ inch. One Set in a Box.

78E2064

Unfinished, per set..... \$1.60

78E2066

Semi-Finished, per set..... 2.15

Saunders Pipe Cutters



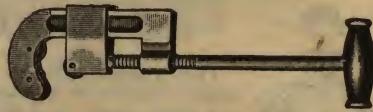
(This Cutter has two rollers and one cutter wheel.)

Roller Cutters turn down burr made in cutting pipe and permit threading after cutting without further labor. Best quality material used in the construction of these cutters and are fully guaranteed.

78E2100 Sizes and Net Prices

Size	Cuts Inches	Price Each	Wheel Each	Rollers Each	Pins Each
1	$\frac{1}{8}$ to 1	\$1.80	\$0.15	\$0.15	\$0.10
2	$\frac{1}{2}$ to 2	2.70	.22	.22	.10
3	$\frac{1}{2}$ to 3	6.60	.40	.35	.15
4	$2\frac{1}{2}$ to 4	10.80	.40	.35	.15
5	4 to 6	16.80	.40	.40	.15

"Barnes" Pipe Cutters



(This style has three Cutter Wheels)

Three Wheel Cutters cut more rapidly than other kinds and are especially adapted for use in cutting in corners and close places. Wheels and pins are of toolsteel and carefully tempered.

78E2108

Size	Cuts Inches	Price, Each	Wheels, Each	Pins, Each
1	$\frac{1}{8}$ to 1	\$2.25	\$0.15	\$0.10
2	$1\frac{1}{2}$ to 2	3.00	.20	.10
3	$1\frac{1}{2}$ to 3	5.00	.25	.10
4	$2\frac{1}{2}$ to 4	10.00	.30	.15
5	4 to 6	15.00	.40	.15

Open Hinge Pipe Vises



MALLEABLE IRON.

This vise has steel jaws and is constructed for heaviest work.

78E2102

No.	Holds Pipe	Weight Pounds	Price Each
1	$\frac{1}{8}$ to $2\frac{1}{2}$	13	\$3.50
2	$\frac{1}{4}$ to $3\frac{1}{2}$	16	5.25
3	$\frac{1}{2}$ to $4\frac{1}{2}$	21	7.50

Roller Tube Expander

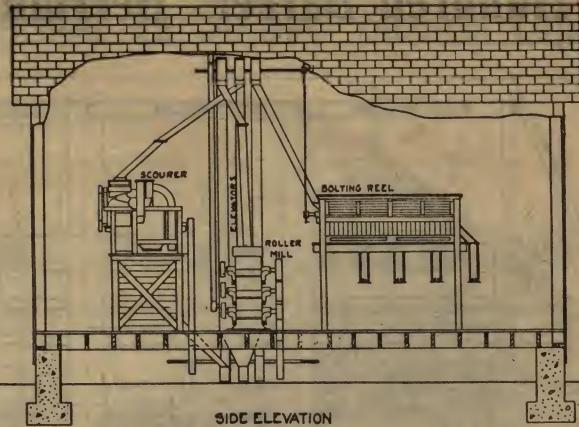
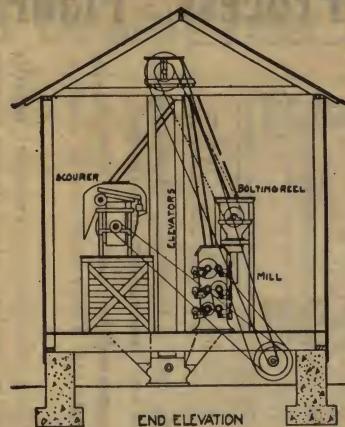
Dudgeon Pattern
Size given is outside diameter of tube.



78E2112 SIZES AND NET PRICES.

Outside Diameter Inches	Price Each	Outside Diameter Inches	Price Each	Outside Diameter Inches	Price Each
$1\frac{1}{4}$	\$4.00	2	\$4.00	3	\$7.20
$1\frac{1}{2}$	4.00	$2\frac{1}{4}$	4.80	$3\frac{1}{2}$	8.20
$1\frac{3}{4}$	4.00	$2\frac{1}{2}$	5.60	4	12.00
$1\frac{7}{8}$	4.00	$2\frac{3}{4}$	6.40	5	20.00

WHOLE WHEAT, RYE, BUCKWHEAT AND CORN PLANTS

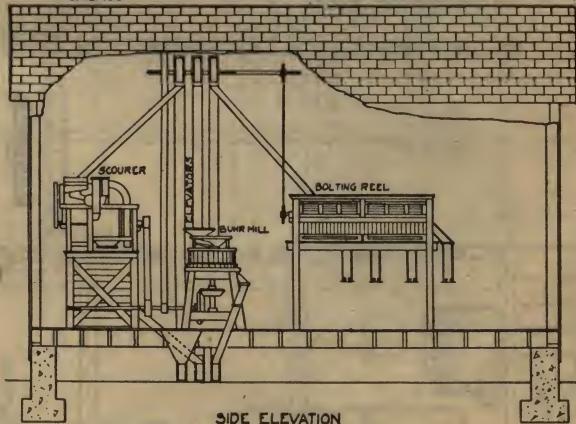
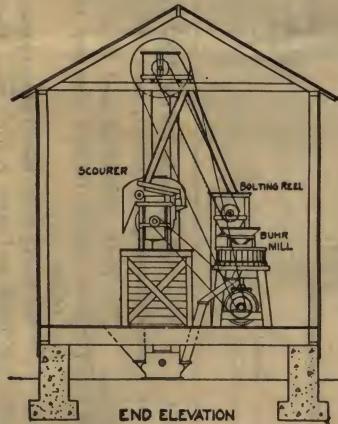


THREE PAIR HIGH ROLLER MILL OUTFIT

75 P 35

B.F.GUMP & CO.

CHICAGO



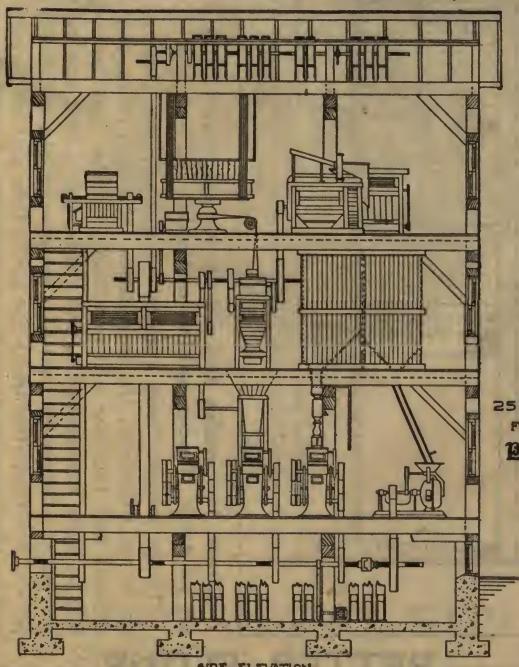
FRENCH BUHR MILL OUTFIT

B.F.GUMP & CO.

CHICAGO

75 P 25

LONG SYSTEM MILLS, 25 BARRELS AND LARGER

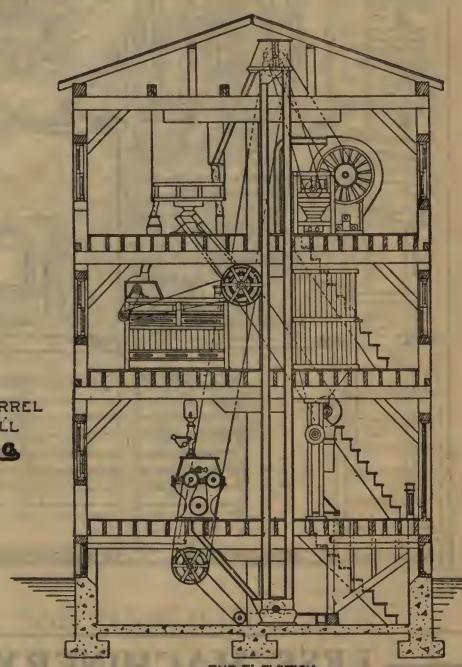


25-50 BARREL

FLOUR MILL

B.F.GUMP & CO.

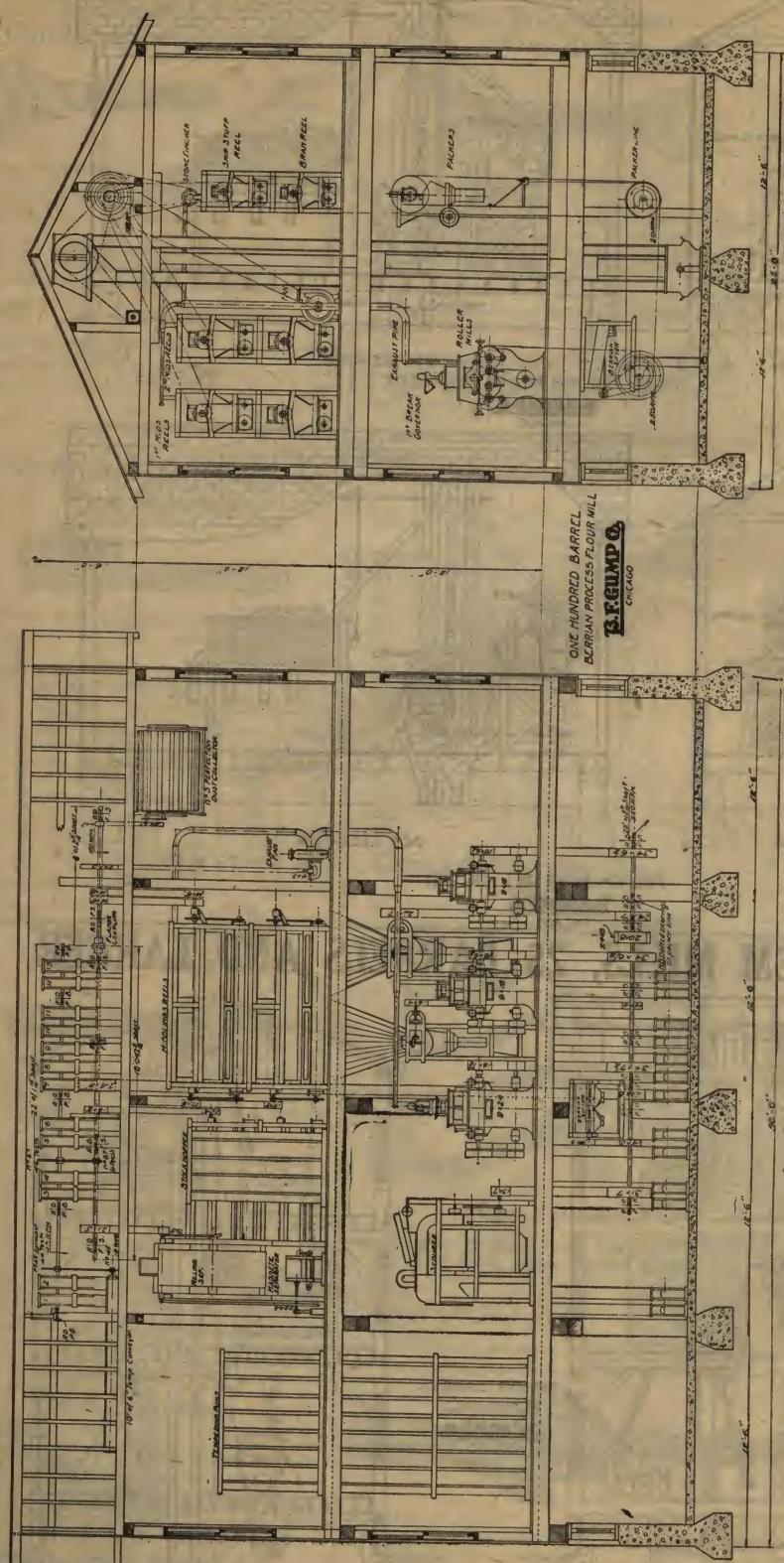
CHICAGO



END ELEVATION

75 P 70

One Hundred Barrel "Berrian Process" Flour Mill



Clears, low grades and red dog are not found in the wheat berry, but are the result of poor milling methods.

In the present "long system" of milling, using three to five breaks and six to ten reductions, the impurities (bran and crease dirt) are ground and reduced with the flour and middlings, the finer they are reduced the harder it is to make the separation, and Purifiers are added later with the idea of removing the impurities (and also for grading the middlings). At this stage, some of the impurities are as fine as the flour and sift through the flour cloths, making the lower grades, which are mixtures of good flour and impurities, therefore a large percentage of good flour is spoiled by contamination.

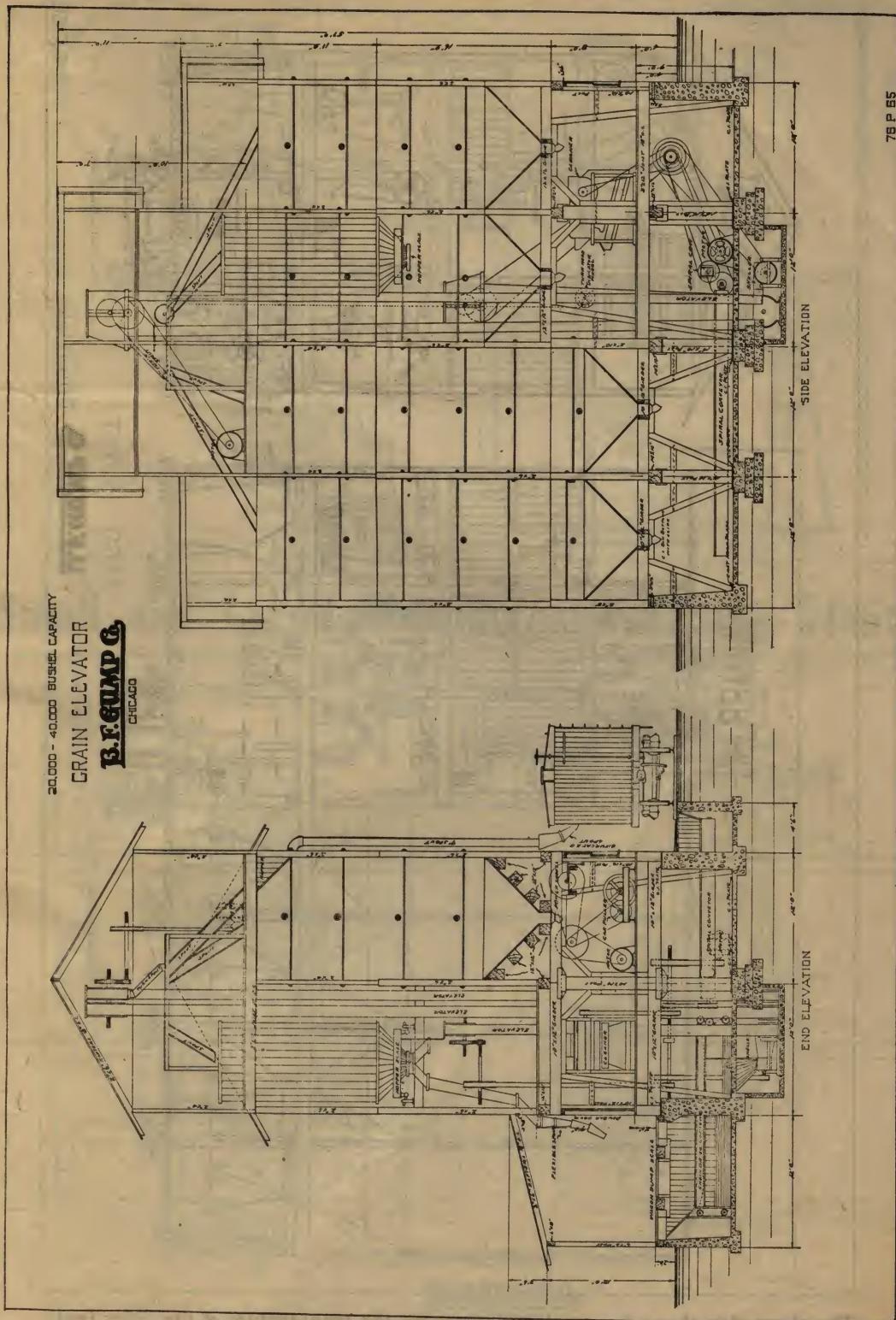
The "BERRIAN PROCESS" consists, first in thoroughly cleansing and conditioning the wheat, only two breaks and two reductions are used.

The bran, middlings and flour are separated immediately after leaving the rolls, which insures cleaner middlings and flour than can be made in any other way.

By using only two reductions, the clean middlings are reduced rapidly to flour and after bolting pass directly to the packer, which insures a more even granulation and whiter flour, which retains its natural flavor and moisture without injuring the quality of gluten. We claim more absorption with better color and quality.

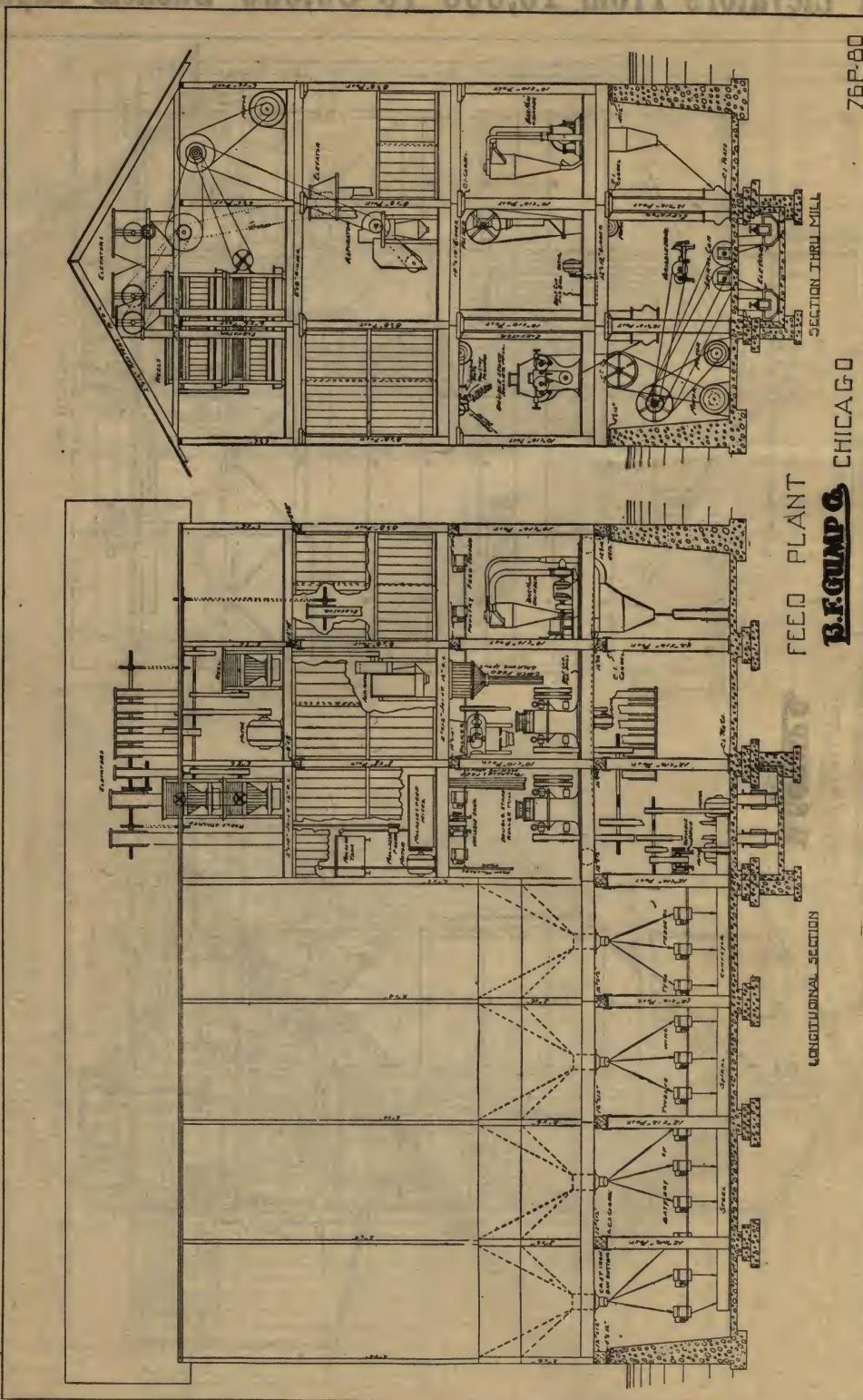
LESS MACHINERY — BETTER FLOUR

Small Elevators From 10,000 To 50,000 Bushels Capacity



**WE HAVE MADE A STUDY OF THE HANDLING AND
CLEANING OF GRAIN. WRITE FOR ESTIMATES.**

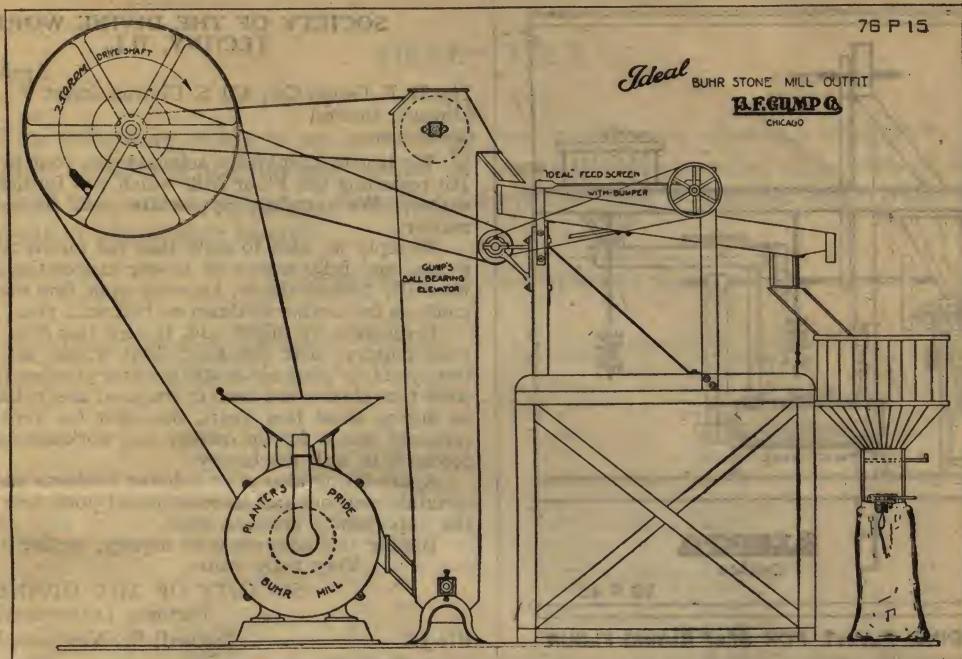
COMPLETE FEED PLANTS



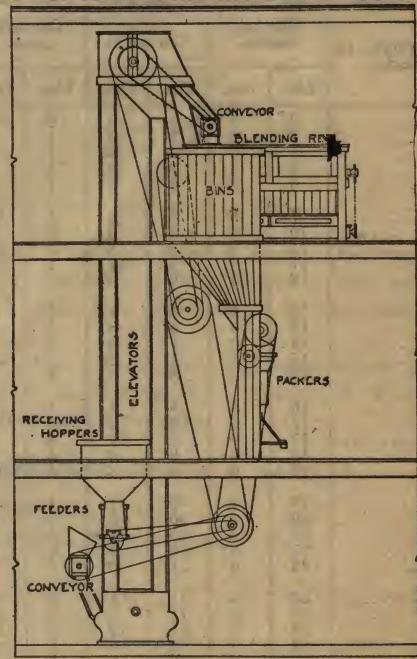
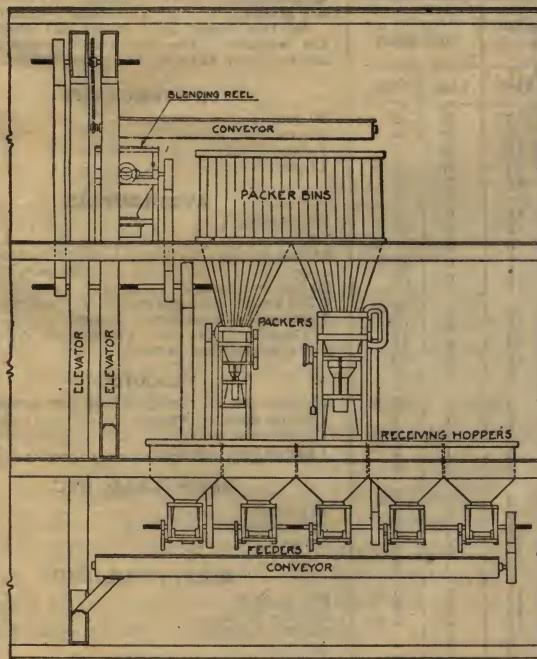
The above plan shows a general feed plant for the manufacture of dry dairy feeds, molasses, poultry and hog feed. All of these can be made at one time or each can be made separately, each unit being independent of the other.

WE ARE PREPARED TO FURNISH COMPLETE PLANS FOR ANY SIZE AND STYLE PLANT DESIRED.

"Ideal" Buhr Stone Mill Outfit



Small and Large Blending and Mixing Plants

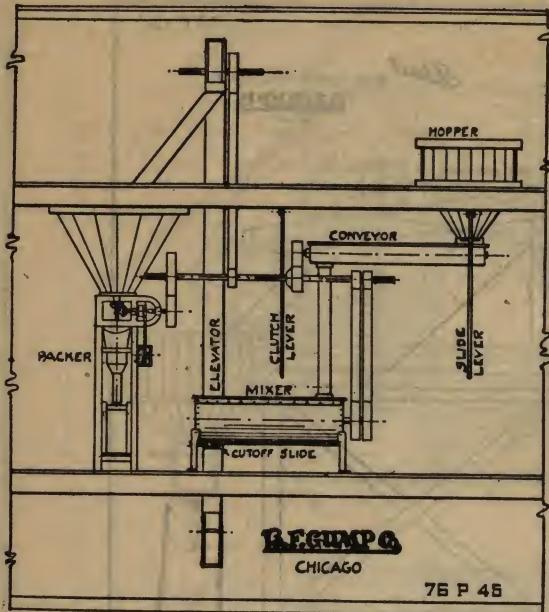


FLOUR BLENDING PLANT

B.F.GUMP & CO.
CHICAGO

We are prepared to furnish estimates for Designing and Building Plants for handling Grains and Cereals either ground or unground.

Blending and Mixing Plants



BLENDING PLANT FOR SELF RISING FLOUR

BUSHEL WEIGHTS WITH THE CORRESPONDING PROPORTIONAL WEIGHTS FOR VARIOUS SUBDIVISIONS OF THE BUSHEL.

Bushel weights in pounds.	One-half bushel.		One peck.		One-half peck.		One-quarter peck.		One quart	
	Lbs.	Ozs.	Lbs.	Ozs.	Lbs.	Ozs.	Lbs.	Ozs.	Lbs.	Ozs.
4	2	0	1	0	0	8	0	7	0	2
8	4	0	2	0	1	0	0	8	0	4
10	5	0	2	8	1	4	0	10	0	5
11	5	8	2	12	1	6	0	11	0	5.5
12	6	0	3	0	1	8	0	12	0	6
14	7	0	3	8	1	12	0	14	0	7
20	10	0	5	0	2	8	1	4	0	10
22	11	0	5	8	2	12	1	6	0	11
23	11	8	5	12	2	14	1	7	0	11.5
24	12	0	6	0	3	0	1	8	0	12
25	12	8	6	4	3	2	1	9	0	12.5
26	13	0	6	8	3	4	1	10	0	13
28	14	0	7	0	3	8	1	12	0	14
30	15	0	7	8	3	12	1	14	0	15
32	16	0	8	0	4	0	2	0	1	0
33	16	8	8	.4	4	2	2	1	1	0.5
34	17	0	8	.8	4	4	2	2	1	1
35	17	8	8	12	4	6	2	3	1	1.5
36	18	0	9	0	4	8	2	4	1	2
38	19	0	9	8	4	12	2	6	1	3
39	19	8	9	12	4	14	2	7	1	3.5
40	20	0	10	0	5	0	2	8	1	4
42	21	0	10	8	5	4	2	10	1	5
43	21	8	10	12	5	6	2	11	1	5.5
44	22	0	11	0	5	8	2	12	1	6
45	22	8	11	4	5	10	2	13	1	6.5
46	23	0	11	8	5	12	2	14	1	7
47	23	8	11	12	5	14	2	15	1	7.5
48	24	0	12	0	6	0	3	0	1	8
50	25	0	12	8	6	4	3	2	1	9
52	26	0	13	0	6	8	3	4	1	10
54	27	0	13	8	6	12	3	6	1	11
55	27	8	13	12	6	14	3	7	1	11.5
56	28	0	14	0	7	0	3	8	1	12
57	28	8	14	4	7	2	3	9	1	12.5
58	29	0	14	8	7	4	3	10	1	13
60	30	0	15	0	7	8	3	12	1	14
62	31	0	15	8	7	12	3	14	1	15
64	32	0	16	0	8	0	4	0	2	0
68	34	0	17	0	8	8	4	4	2	2
70	35	0	17	8	8	12	4	6	2	3

ONE REASON WHY WE ARE ABLE TO HOLD OUR CUSTOMERS

SOCIETY OF THE DIVINE WORD
TECHNY, ILL.

April 17, 1919.

The B. F. Gump Co., 431 S. Clinton Street
Chicago, Illinois.
Gentlemen:

We beg to thankfully acknowledge your favor of the 7th regarding the Flour Mill which you furnished us last winter. We certainly appreciate your interest in this matter.

In reply we wish to state that the mill is now in operation, and fully comes up to our expectations of which we really had no doubt, knowing your firm and business methods from other dealings we had with you.

Perchance, we might add, though this does not touch your inquiry, that the Feed Mill which we purchased from you four years ago is still working excellently. Though since that time it has been in constant use, it has not cost us during these four years, one cent for repairs, which certainly speaks for the quality and workmanship of your products in mill machinery.

Appreciating also your obliging business methods, we certainly will not fail to recommend your firm whenever the opportunity presents itself.

Hoping this answers your inquiry, we beg to remain,
Very truly yours,

SOCIETY OF THE DIVINE WORD,
Farming Department
(Signed) Fr. Newhaus, Manager.

FN-JK

WEIGHTS AND MEASURES

TROY

24 grains (gr.) 1 pennyweight—pwt.
20 pwt. 1 ounce—oz.

3.2 grains 1 carat, diamond wt.

By this weight gold, silver and jewels only are weighed. The ounce and pound in this are the same as in apothecaries' weight.

APOTHECARIES

20 grains	1 scruple
3 scruples	1 drachm
8 drs.	1 ounce
12 ozs.	1 pound

AVOIRDUPOIS

16 drachms	1 ounce
16 ounces	1 pound
25 lbs.	1 quarter—qr.
4 qrs.	100 weight—cwt.
20 hundred weight	1 ton
5,760 grains apothecaries or troy weight	1 lb.
7,000 grains avordupois weight	1 lb.
Therefore, 144 lbs. avordupois equal 175 lbs. apothecaries' or troy.	

LIQUIDS

1 gallon oil	weighs 7.32 lbs. avordupois
1 gallon distilled water	8.33 lbs.
1 gallon sea water	8.55 lbs.
1 gallon proof spirits	7.68 lbs.

IRON, LEAD, ETC.

14 pounds	1 stone
21 1/2 stones	1 pig
8 pigs	1 fother

BEEF, PORK, ETC.

200 pounds	1 barrel
196 lbs. (flour)	1 barrel
100 lbs. (fish)	1 quintal

DRY

2 pints	1 quart—qt.
8 quarts	1 peck—pk.
4 pecks	1 bushel—bu.
36 bushels	1 chaldron

LIQUID OR WINE

4 gills	1 pint—pt.
2 pints	1 quart—qt.
4 quarts	1 gallon—gal.
3 1/2 gal.	1 barrel—bbl.
2 bbls.	1 hogshead—hhd.
U. S. Standard Gallon	231 cubic inches
Beer gal.	282 cubic inches
36 beer gallons	1 barrel

USEFUL INFORMATION

YIELD TABLE.

The following table is an extremely convenient one, showing accurately the number of pounds of flour per bushel of wheat and the number of barrels of flour per 100 bushels of wheat when using anywhere from 4 bushels and 10 lbs. to 5 bushels of wheat per barrel.

(Compiled by Allis-Chalmers Co.)

No. Bushels per Barrel Flour.	No. Pounds Flour per Bushel.	No. Barrels Flour per 100 Bushels Wheat.	No. Bushels per Barrel Flour.	No. Pounds Flour Per Bushel.	No. Barrels Flour per 100 Bushels Wheat.
		Bbl. Lbs.			Bbl. Lbs.
4.10	47.04	24- 00	4.36	42.60	21-144
4.11	46.85	23-177	4.37	42.45	21-129
4.12	46.66	23-158	4.38	42.30	21-114
4.13	46.48	23-140	4.39	42.15	21- 99
4.14	46.30	23-122	4.40	42.00	21- 84
4.15	46.11	23-103	4.41	41.85	21- 69
4.16	45.93	23- 85	4.42	41.70	21- 54
4.17	45.75	23- 67	4.43	41.55	21- 39
4.18	45.57	23- 49	4.44	41.40	21- 24
4.19	45.40	23- 32	4.45	41.26	21- 10
4.20	45.23	23- 15	4.46	41.11	20-191
4.21	45.05	22-193	4.47	40.97	20-177
4.22	44.88	22-176	4.48	40.83	20-163
4.23	44.71	22-162	4.49	40.69	20-149
4.24	44.54	22-142	4.50	40.55	20-135
4.25	44.37	22-125	4.51	40.41	20-121
4.26	44.21	22-109	4.52	40.27	20-107
4.27	44.04	22- 92	4.53	40.13	20- 93
4.28	43.88	22- 76	4.54	40.00	20- 80
4.29	43.72	22- 60	4.55	39.86	20- 66
4.30	43.57	22- 45	4.56	39.72	20- 52
4.31	43.39	22- 27	4.57	39.59	20- 39
4.32	43.23	22- 11	4.58	39.46	20- 26
4.33	43.07	21-191	4.59	39.30	20- 10
4.34	42.91	21-175	5.00	39.20	20- 00
4.35	42.76	21-160	.....	.....	.....

CAPACITY OF BOXES, BINS, ETC.

By the United States standard, 2,150 cubic inches make a bushel; a cubic foot contains 1,728 cubic inches. Rule—Multiply the number of feet width of bin by the length, the result by the depth, then divide the product by 5 and multiply the quotient by 4, which number will give the quantity in bushels.

To compute the contents of a hopper—Multiply the length by the breadth, in inches, and this product by one-third the depth, measuring to the point. Divide the last product by 2,150 and the quotient thus obtained will be the contents of the hopper in bushels.

TO FIND NUMBER OF BUSHELS OF SHELLLED CORN IN CRIBS CONTAINING EAR CORN.

First find the contents in cubic feet and allow $2\frac{1}{2}$ cubic feet of ear corn to one bushel.

The same rule also applies to the contents

of bins or boxes containing grain other than ear corn, the only difference being that you allow $1\frac{1}{4}$ cubic feet of bin space to one bushel of grain.

While this rule is not absolutely exact on account of not using the fractions, it works out well in actual practice.

DIMENSIONS OF A BARREL.

Diameter of Head 17".

Diameter at Bung or Bulge 19".

Height of Barrel 28".

Volume of Barrel 4.45 cubic' or, 7689 cubic" =3.576 bushels.

1 bushel=1.247 cubic' or =2150.42 cubic" or equal to a cube of which its sides are 12.914" long.

TO GET THE BEST BOLTING CLOTH.

We handle only "Dufour" silk and "Tyler" Wire Cloth. You will get the best if you order from Gump.

STANDARD WEIGHTS IN POUNDS PER BUSHEL

From the Circular of the Bureau of Standards No. 10, of the Department of Commerce, U. S. A.
Third Edition Issued February, 1918.

This list simply shows the legal weights per bushel of various commodities, as fixed by National Legislation mainly for customs purposes, or by State Legislation for purposes of commerce within the State. The bushel in customary use in the United States is the Winchester bushel, containing 2150.42 cubic inches dry measure.

	Alfalfa Seed	Barley	Beans	Bran	Buckwheat	Clover Seed	Cracked	Corn, Including Indian and Maize		Cornmeal Including Indian Meal		Cotton Seed	Emmer	Kaffir Corn	Malt	Millet	Oats	Peanuts	Peas	Rye	Rye Meal	Shorts	Spelt or Speltz	Wheat					
								In the Ear	Husked	Pop Corn (in Ear)	Pop Corn (Shelled)																		
Federal Government.....	48	60	48	48	48	48	48	56	56	46	48	32	34	32	60	56	56	56	56	56	56	56	56	56	60				
Alabama.....	47	60	48	48	48	48	48	56	56	46	48	32	32	32	60	56	56	56	56	56	56	56	56	56	56	60			
Arkansas.....	48	20	52	60	48	48	48	56	56	48	52	33 ^{1/2}	50	32	60	56	56	56	56	56	56	56	56	56	56	60			
California.....	50	40	40	40	40	40	40	56	56	52	52	33 ^{1/2}	32	32	54	54	54	54	54	54	54	54	54	54	54	54	60		
Colorado.....	48	60	52	60	48	60	48	56	56	50	50	33 ^{1/2}	32	32	56	56	56	56	56	56	56	56	56	56	56	56	60		
Connecticut.....	48	60	20	48	60	48	60	56	56	50	50	33 ^{1/2}	32	32	60	56	56	56	56	56	56	56	56	56	56	56	60		
Delaware.....	48	60	20	52	60	48	60	56	56	48	48	32	50	32	22	56	56	56	56	56	56	56	56	56	56	56	60		
Florida.....	48	60	20	48	60	48	60	56	56	48	48	32	50	32	22	56	56	56	56	56	56	56	56	56	56	56	60		
Georgia.....	47	20	52	60	48	60	48	56	56	48	48	30	50	32	22	56	56	56	56	56	56	56	56	56	56	56	60		
Hawaii.....	48	48	48	48	48	48	48	56	56	48	48	30	32	25	60	56	56	56	56	56	56	56	56	56	56	56	60		
Idaho.....	60	48	60	20	50	60	48	60	70	56	48	32	32	32	56	56	56	56	56	56	56	56	56	56	56	56	60		
Illinois.....	60	48	20	52	60	48	60	70	70	56	56	48	48	32	40	56	38	50	32	60	56	56	56	56	56	56	60		
Indiana.....	60	48	60	20	50	60	48	60	70	56	56	50	48	32	40	56	38	50	32	20	60	56	56	56	56	56	60		
Iowa.....	60	48	60	20	48	60	48	60	70	70	56	56	48	48	32	40	56	38	50	32	56	56	56	56	56	56	60		
Kansas.....	60	48	60	20	48	60	48	60	70	70	56	56	48	48	32	40	56	38	50	32	22	60	56	56	56	56	60		
Kentucky.....	47	20	56	60	48	60	48	60	70	70	56	56	48	48	32	40	56	38	50	32	60	56	56	56	56	56	60		
Louisiana.....	32	32	32	32	32	32	32	56	56	50	50	33 ^{1/2}	50	32	24	60	56	56	56	56	56	56	56	56	56	56	60		
Maine.....	60	48	60	20	48	60	50	50	50	50	50	33 ^{1/2}	32	32	32	32	32	32	32	32	32	32	32	32	32	32	60		
Maryland.....	60	48	60	20	48	60	50	50	50	50	50	33 ^{1/2}	50	32	20	60	56	50	50	50	50	50	50	50	50	50	60		
Massachusetts.....	48	60	20	48	60	50	50	50	50	50	50	33 ^{1/2}	34	50	32	22	60	56	56	56	56	56	56	56	56	56	60		
Michigan.....	48	60	..	48	60	..	70	..	56	50	50	33 ^{1/2}	32	20	60	56	50	20	56	50	50	50	50	50	50	50	60		
Minnesota.....	60	48	60	..	50	60	..	70	..	56	50	33 ^{1/2}	50	32	..	60	56	50	50	50	50	50	50	50	50	50	60		
Mississippi.....	48	..	20	48	60	..	72	..	56	48	44	48	32	38	50	32	24	60	56	56	56	56	56	56	56	56	40	60	
Missouri.....	48	60	20	52	60	..	70	..	56	50	50	33	33	38	50	32	24	60	56	56	56	56	56	56	56	56	56	60	
Montana.....	48	60	20	52	60	..	70	..	56	50	50	33	33	38	50	32	..	60	56	56	56	56	56	56	56	56	56	60	
Nebraska.....	48	60	20	52	60	..	70	..	56	50	50	33	33	30	32	..	60	56	56	56	56	56	56	56	56	56	60		
Nevada.....	60	48	60	20	50	60	..	70	..	56	50	33	33	48	56	32	50	32	22	60	56	56	56	56	56	56	20	48	60
New Hampshire.....	60	48	60	20	50	60	..	70	..	56	48	33 ^{1/2}	32	56	32	50	32	32	32	60	56	56	56	56	56	56	56	60	
New Jersey.....	48	..	20	48	60	50	..	..	56	50	33 ^{1/2}	32	32	32	32	32	32	32	32	20	60	56	50	20	..	60	
New Mexico.....	48	60	..	48	60	..	..	..	56	50	33 ^{1/2}	32	32	32	32	32	32	32	32	60	56	56	56	56	56	56	60
New York.....	60	48	60	20	52	60	..	70	..	70	56	56	50	32	56	50	32	22	60	56	56	56	56	56	56	56	60		
North Carolina.....	48	60	20	48	60	..	..	..	..	56	50	33 ^{1/2}	32	32	32	32	32	32	32	60	56	50	20	..	60		
North Dakota.....	60	48	60	20	50	60	..	..	70	70	56	50	33 ^{1/2}	50	50	32	22	60	56	56	56	56	56	56	56	56	60
Ohio.....	48	60	20	42	60	..	70	..	56	50	33 ^{1/2}	32	32	50	32	..	60	56	56	56	56	56	56	56	56	40	60		
Oklahoma.....	60	48	60	20	52	60	..	68	42	56	48	33 ^{1/2}	56	34	50	32	..	60	56	50	20	..	60						
Oregon.....	46	..	42	60	..	70	..	56	50	33 ^{1/2}	32	56	38	50	32	22	60	56	56	56	56	56	56	56	56	60			
Pennsylvania.....	60	47	60	20	48	60	..	70	..	56	50	33 ^{1/2}	32	56	38	50	32	22	60	56	50	20	40	60	60	60	60		
Rhode Island.....	48	60	20	48	60	..	70	..	56	50	33 ^{1/2}	32	56	38	50	32	22	60	56	50	20	40	60	60	60	60			
South Carolina.....	48	60	20	50	60	..	..	..	..	56	50	33 ^{1/2}	32	38	50	32	..	60	56	50	20	..	60				
South Dakota.....	60	48	60	20	52	60	..	70	..	70	56	56	50	32	50	48	30	..	50	32	23	60	56	..	40	60			
Tennessee.....	48	60	20	50	60	..	..	..	..	56	50	33 ^{1/2}	32	56	50	48	28	..	50	32	23	60	56	..	60		
Texas.....	48	..	20	42	60	..	70	..	56	50	33 ^{1/2}	32	56	50	48	28	..	50	32	23	60	56	..	60					
Vermont.....	48	..	20	42	60	..	70	..	56	50	33 ^{1/2}	32	56	50	48	28	..	50	32	23	60	56	..	60					
Virginia.....	60	48	60	20	48	60	..	70	..	56	48	33 ^{1/2}	30	38	50	32	22	56	56	56	56	56	56	56	56	60			
Washington.....	60	48	60	20	48	60	..	70	..	56	48	33 ^{1/2}	30	38	50	32	22	56	56	56	56	56	56	56	56	60			
West Virginia.....	48	..	42	60	56	50	33 ^{1/2}	32	38	50	32	22	56	56	56	56	56	56	56	56	60				
Wisconsin.....	60	48	60	20	50	60	56	50	33 ^{1/2}	34	50	32	..	60	56	50	20	..	60							

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